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CULTURAL ASPECTS OF DERMATOLOGIC THOUGHT

PRESIDENT'S ADDRESS

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PHILADELPHIA

Since the inauguration of this association in 1876, there have been numerous presidential addresses, and hundreds of papers have been read. It would seem that little if anything had been left unsaid. For years, however, various thoughts have been in my mind, at first vague and indefinite but becoming clearer and more rounded until they have become distinct convictions.

Teachers should realize that they can either make or mar the future of the potential leaders in medicine, including those in dermatology. Teaching should not be simply a routine. Each lecture should be the result of painstaking preparation and should be presented in such a way that it will hold the interest of the students. Whenever possible, a setting should be given to furnish a background for the discourse. For example, when dermatitis herpetiformis is discussed, one might give a short account of the life and activities of Dr. Louis A. Duhring. When the treatment of vascular nevus with solid carbon dioxide is described, one might give the highlights of the career of Dr. William Allen Pusey. When suggesting crude coal tar in the treatment of facial eczema of babies, Dr. Charles White might be referred to as the third professor of dermatology at Harvard, and it might be mentioned that his father, Dr. James White, inaugurated this specialty at that institution.

Lectures, if only a few, are necessary in the teaching of dermatology, a rather abstruse subject, to get the cobwebs out of the brains of the students. Personally, I have been much impressed with the thought that the students do not have actual contact with a sufficient number of dermatologic conditions. When the patients are presented in the amphitheater, only the students in the first few rows can see the significant details. Presentations may be made to small groups in classes in the wards, yet each student is in contact with only a few dermatologic entities. Therefore, an innovation has been made at the

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Jefferson Medical College of Philadelphia. Each week one third of the class attends student conferences, while the other two thirds examines dispensary patients arranged in separate rooms. In this way, over a fifteen week period, each student will have had close contact with approximately 120 patients and will have had five one hour conferences for their discussion.

The students also have the opportunity to study microscopic specimens pertaining to these cases, such as the animal and vegetable parasites, molds, fungi, cultures and histologic slides.

Another point has occurred to me: Are the students being instructed so that they will be able to make a clinical diagnosis, or is the making of a laboratory diagnosis being stressed too vigorously to the exclusion of the former? Scientific medicine is moving ahead so rapidly that the student may cease to realize that a clinical diagnosis must be made and then confirmed or invalidated by laboratory methods. This point cannot be too strongly emphasized; otherwise certain eruptions with definite clinical characteristics either will not be diagnosed or will be improperly classified by the student who places exclusive reliance on the laboratory and none on what he sees.

There could be no more graphic example than the clinical diagnosis of the late cutaneous eruptions of syphilis, because, as is well known, the positive results of laboratory tests of the blood help in only slightly over 80 per cent of these cases. If the student's eye is not sufficiently trained and if he does not have a realization of the characteristic grouping and the destructive tendency, then the future practitioner of medicine will fail to diagnose the condition in from 15 to 20 per cent of the cases of this type.

As to training the eye and the sense of color, some years ago on a rainy, murky day, a patient was presented to the students. In addition to the eruption for which she was exhibited, the woman showed on her arm a curious, gyrated, festooned, weird-looking outbreak of variegated colors. There was no thought on the part of any student as to the source of this curious outbreak. The instructor took a wet towel and applied it to the outbreak, and it entirely disappeared. The dyes from the moist shirt sleeve had stained the skin with the grotesque outbreak. This emphasizes strongly that the student should be so trained that he knows the clinical appearance of at least the common cutaneous conditions.

To go back again, students are potential leaders of the dermatologic thought of the future. With this concept in view, they should be helped onward toward this leadership. A few hours in their medical course, I believe, should be assigned to public speaking, training them to think while on their feet before an audience, and the proper methods of approach to and the preparation of a scientific paper.

Dermatologists who have striven hard over a few or many years have their efforts crowned with success when they receive the accolade of membership in the American Dermatological Association. However, more is expected than that they should be leaders in this one sphere of endeavor. There should be a greater rounding out of the career rather than simply a superlative knowledge of one phase of life. A member of a scientific society should have knowledge in other fields, not only in science but in the fine arts as well. There should be added to the vocational science a certain amount of cultural education.

How can minds and thoughts of absolutely opposite lines mingle and entertain except by using culture as the bridge which unites members of diverse scientific societies?

Some months ago a group of physicians, most of them with diverse medical interests, made a journey of more than a hundred miles to confer with the state director of public health. In this group was an internationally known professor of medicine. Did this physician talk during the two hour journey entirely about his special line of endeavor? Instead, he led the discussion on the worthwhile modern novel and the classics of literature, both old and new, and the trip was a diversion rather than a continuation of daily endeavor.

Two of the most instructive and entertaining dinners I have ever attended consisted of not more than a dozen persons, both men and women, each a leader in a different line of endeavor. For entertainment, we had to meet on neutral ground, and that field had to be the fine arts.

There has never been a nation which has revered and worshipped knowledge and learning more than has China. By far the most popular god of Chinese literature is the demon-faced figure Kuei Hsing. Tradition says that he once lived on earth and attained, by his literary genius, the highest grade at the Emperor's official examinations but was refused the post to which he was entitled on account of his ugliness. In despair, he threw himself into the Yangtse River and was borne by the fish-dragon to the place which he now occupies in the firmament. The fish-dragon is his special attribute and is the emblem of literary perseverance and success. It is often used alone in symbolic decoration.

Notwithstanding the Chinese worship of knowledge, they believe in a rounding of character and culture and that a certain portion of time should be devoted to amusément. This is exemplified by the Chinese emblems of the four liberal accomplishments: painting, literature, music and checkers, which are represented on their porcelains, some hundreds of years old, by a picture scroll, books, a lute and a go (checker) board with a jar containing the pieces used in the game.

Should not, therefore, the Chinese point of view be a lesson that part of one's time should be devoted to entertainment and part to the

attainment of culture, while the greater portion should be intensively used in perfecting one's knowledge in a specialty?

One of my most revered and closest friends is a jurist. A suit was recently brought before his court as to whether certain chairs conformed to the Adam type. This judge remarked from the bench that at the time of Adam he did not believe there were any chairs made. As a leader of a learned profession, there should be sufficient general knowledge to distinguish the type of furniture made by the Adam brothers.

The difference between Tchaikowsky and Stokowski is not difficult, nor is the recognition of one or more of the outstanding compositions of Sibelius, the national musical genius of Finland. This speaks again for broader knowledge and vision.

A little study and contact will make one cognizant of and create a familiarity with the magnificent browns so characteristic of the portraiture of Rembrandt, the black background and the tapering fingers so often found in the oils of Van Dyck, the flattened and emaciated-looking profiles of El Greco and the feathery appearance of the foliage of the trees of Corot.

The most celebrated oriental rug extant, the Persian masterpiece of weaving of the sixteenth century, the "Holy Carpet of the Mosque at Ardebil," dated as of the year 946 A. H. (1568 A. D.), hangs in the Royal Victoria and Albert Museum, South Kensington, London. This rug, 34½ by 17½ feet (1,052 by 533 cm.), with about three hundred and twenty-five knots tied in each square inch, required over sixteen years to complete. An oriental rug is mentioned in an address of this character because of the following inscription woven into the texture:

> I have no refuge in the world other than thy threshold;
> My head has no protection other than thy porchway;
> The work of the slave of this Holy Place.
>
> —Maksoud of Kashan, in the year 946 A. H.

A dermatologist should slave at his specialty because it is his life work, but he should not be a slave to it as this weaver was compelled to be.

Most of the world today is filled with unrest and chaos. What is really fine, the highest part of human nature—refinement and culture—hangs by a thread which can easily be broken for all time. It behooves members of this learned body to preserve that which is so well worth while.

What better precept or aspiration could one have than to take as one's aim in life the words of Vergil:

> Sic itur ad astra.

TREATMENT OF ACNE VULGARIS BY CRYOTHERAPY (SLUSH METHOD)

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Solid carbon dioxide has been used as a therapeutic agent in dermatology for over a quarter of a century. In 1925 Giraudeau conceived the idea of applying a mixture of carbon dioxide "snow," acetone and sulfur in the form of a slush for the treatment of acne vulgaris and in subsequent communications described the details of the method as well as its rationale.[1] In recent years this type of therapy has been introduced in the American literature by Karp, Nieman and Lerner,[2] who reported rather striking results. In all the reports thus far issued no detailed attempt has been made to define the circumstances under which the slush method can be used to its best advantage in acne vulgaris, and the reader in perusing these papers is likely either to be skeptical or to gain the impression that this form of treatment can be applied with equal success in all forms of this disease.

During the past ten months we have had the opportunity to treat 115 patients with acne vulgaris and its sequelae. Of these 95 were observed long enough to afford us a fairly adequate idea as to the indications and contraindications of the slush treatment. As a result of this investigation it is our intention to attempt a more precise evaluation of this method, which we believe enjoys a definite place in therapeutics and yet has certain limitations.

TECHNIC

The technic has been fully described in the publications of Giraudeau and of Karp, Nieman and Lerner; yet a brief recapitulation seems in order, for we wish to introduce certain comments of a practical nature.

Solid carbon dioxide is placed in a mortar and by means of a pestle is ground to a fine powder. According to the aforementioned observers, about 10 per cent

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1. Giraudeau: Cryothérapie directe à l'aide d'un mélange de neige carbonique et d'acétone, Bull. Soc. franç. de dermat. et syph. **35**:463, 1928; La cure d'exfoliation par le mélange de neige carbonique, acétone et soufre dans l'acné, ibid. **36**:654, 1929.

2. Karp, F. L.; Nieman, H. A., and Lerner, C.: Cryotherapy for Acne and Its Scars, Arch. Dermat. & Syph. **39**:995 (June) 1939.

precipitated sulfur is mixed with the "snow" and enough acetone is added to form a slush. In actual practice, however, much less sulfur may be added, with equally beneficial results, and in some instances the addition of this substance may be altogether abandoned. This mixture of slush is applied on a tampon of absorbent cotton, which is covered in turn with a square of gauze. It is now ready to be applied to the lesions. This procedure is carried out once or twice a week (in nearly all our cases it was done once weekly), and each area or lesion is treated with enough pressure for about half a second to produce blanching of the individual spots. After each application the sulfur, if incorporated in the slush, precipitates on the skin as a yellowish residue, which is allowed to remain for from fifteen to thirty minutes (average twenty minutes).

By this means a superficial freezing action is obtained, with the object of causing a certain amount of peeling. With greater experience, and depending on the type of lesion to be treated, the pressure exerted against the skin may be increased for the purpose of stimulating a greater inflammatory response, as in acne indurata. Because the tolerance of patients varies considerably with different textures of skin and complexions, it was our practice to begin with mild conservative treatments, increasing the amount of pressure until a satisfactory peeling was secured. On the average six blanching applications to each area treated once a week were required to obtain superficial exfoliation; in some instances as many as ten blanching applications were essential. Once exfoliation was obtained, it was observed to occur over the areas treated on the second or third day after the respective application of the slush, and the process was completed by the fifth or sixth day. It is likely, however, that in some instances peeling may occur sooner than we have mentioned.

Early in this investigation we tried to determine whether the sulfur added to the slush mixture was of special value. At the outset, therefore, we treated 10 patients with a mixture in which 10 per cent talcum powder was added instead of the sulfur. The peeling obtained and the response of the acne was far less satisfactory than when the slush contained precipitated sulfur, for in only 1 of the control group of 10 patients was the result satisfactory after four weekly treatments, whereas with the addition of precipitated sulfur the effects within a similar period of time were far more striking. It was therefore decided to use the substance in the subsequent routine treatment of our patients, except in certain conditions to be named later in this report. It is our belief that this is one of the best ways to apply sulfur in the treatment of acne vulgaris. In cases of acne vulgaris associated with pronounced oily skins, it was found advantageous to add acetone in excess so as to form a liquid layer over the slush; in this manner the drying effect on the skin was greater and the final results more satisfactory.

In occasional cases the application of slush may be accompanied by undesirable effects far out of proportion to what may be called the average or normal behavior of skin to solid carbon dioxide applied in this way. These unfavorable phenomena, which will be described, constitute evidence that caution must be exercised in instituting the treatment. In addition to these uncommon reactions, skin submitted to applications of slush exhibits the following normal behavior. During the application of the mixture there is often experienced a moderate burning sensation, which in the vast majority of the cases is transient and easily tolerated. After the removal of the powdery deposit on the skin, the treated surface is found to be moderately erythematous and in occasional instances slightly edematous. In the majority of cases the sensation of burning is greatly diminished or may altogether disappear, while in a few cases it may persist in a tolerable state for

several hours before complete disappearance. After a few treatments peeling occurs regularly. In some cases blistering may appear at points treated more intensively, and this is followed by crusting of a superficial type, with detachment of the crusts in from one to two weeks. In our observations such areas were never the sites of subsequent atrophy or scarring. As mild blistering was occasionally caused for therapeutic purposes, we do not consider it in itself an undesirable effect, except in rare instances in which it occurs as an evidence of abnormally diminished tolerance to the application of solid carbon dioxide.

On the whole, we encountered in 115 cases but a half-dozen instances in which the reactions to this mixture constituted a real contraindication to its further use, and these exceptions will be described later.

EVALUATION OF THE ADJUVANT MEASURES

In introducing a new procedure in the treatment of acne vulgaris one must be cognizant of the pitfalls that confront one in the evaluation of results. It must be admitted that the fundamental cause of acne vulgaris is still unknown. The weight of evidence seems to point in the direction of an endocrine imbalance, but its precise mechanism remains speculative. In any event the results achieved thus far by the use of various endocrine preparations and other products presumably acting in a systemic manner have been regarded with considerable skepticism, and the best methods of therapy appear to be based on procedures involving only a direct action on the tissues, for example roentgen ray irradiation, ultraviolet irradiation and application of white lotion N. F. and various other topical remedies. The slush mixture is simply another such form of therapy.

In a recent communication Stokes and Sternberg [3] stressed that there are apparently numerous factors capable of exerting a considerable influence on acne vulgaris, and apparently these factors are capable of inducing an exacerbation and the many unexplained variations in the normal course of this disease, with its periods of spontaneous improvements and recrudescences.

From the beginning of this investigation we began to encounter an occasional instance in which the secondary factors seemed to be of some importance, and it was decided to reinvestigate these points, with special reference to the question of diet and intestinal hygiene. There were a few patients requiring correction of secondary anemia, constipation and foci of infection. All the patients were requested not to use iodized salt, even though we have seen no clearcut examples in which acne vulgaris could be attributed definitely to this factor. Seborrhea of the scalp was an accessory factor of importance in some cases, and treatment was given when indicated.

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3. Stokes, J. H., and Sternberg, T. H.: A Factor Analysis of the Acne Complex with Therapeutic Comment, Arch. Dermat. & Syph. **40**:345 (Sept.) 1939.

In the majority of our cases the type of diet apparently had little influence on the course of the condition, except perhaps in an indirect way. There were 2 patients who would experience exacerbations when excessive carbohydrates were consumed. In an additional 9 patients there was a history of exacerbation of the acne vulgaris when fats were ingested in large quantities. Of these, 7 had a recurrence of their facial lesions when allowed to eat fatty foods again, even though they were given at the same time slush and other adjuvant measures. It was ascertained that 3 of the latter group and 4 others who were refractory to slush therapy were drinking large quantities of milk (1 to 2 quarts a day), and in these cases prohibition of milk seemed to be accompanied by a more favorable response to cryotherapy. So far as diet was concerned in its relation to our problem, our observations cannot be regarded as more significant than pointing to the belief that this is a secondary factor acting in some instances to produce intensification of acne vulgaris.

In 2 instances there seemed to be a relation to menstruation, for the cutaneous lesions became manifest shortly before each menstrual period. Gynecologic examination in these cases revealed no abnormalities. Slush treatment in these patients failed to produce a permanent response.

RESULTS

1. *Papulopustular Acne.*—Our data are based on observations made on a group of 69 patients with this form of acne. The number of applications of slush ranged from three for mild conditions to twenty-four for severe forms of the disease. On the average ten treatments were required before the condition of the skin of the face could be characterized as cured or as sufficiently improved so that cryotherapy could be stopped and local measures continued, including application of white lotion N. F. Of the 69 patients 48 fell into this general category, and of the latter 32 were greatly improved and 16 were apparently cured. The past history of these 48 patients is interesting, for 8 had received previously a full course of roentgen ray irradiation, resulting in temporary improvement but followed by recurrence, for which they were now treated with slush; 9 had had roentgen ray irradiation (from five to sixteen treatments of 75 r each), with little or no improvement; 9 had had many treatments with the quartz mercury vapor glow lamp, with no improvement; 3 had also received treatments with a quartz mercury vapor glow lamp, with some amelioration but followed by recurrence, and the remaining 19 had been treated with the conventional local measures, such as application of white lotion, N. F. It will be seen, then, that 17 patients had previously received roentgen ray irradiation, 12 had had irradiation from a quartz mercury vapor glow lamp, and the remaining 19 had had only topical therapy.

Of the 48 patients in whom the result could be considered as excellent, 11 had a recurrence within from two weeks to six months, though in the vast majority of these the exacerbation seemed to be considerably milder than the condition when first treated. Of the recurrences it is interesting that 3 patients among these had also had recrudescenses after their previous roentgen ray irradiation treatments, despite adequate dosage. Of the 11 recurrences all but 3 responded rapidly to renewed treatment with the slush mixture. We are unable at present to furnish additional data on the further course of the disease in these patients.

There were, in addition, 7 patients whose condition was but slightly improved; 6 were unimproved, and 8 were, for one or another reason, unable or unwilling to tolerate the treatment.

The incidence of successful results being 70 per cent (in 48 of 69 patients), this would on the surface seem to represent a considerable advance in therapeutics, especially since these patients had been treated previously by other methods. Yet this conclusion must be tempered somewhat in view of the following circumstances. While slush therapy proved an excellent adjuvant measure in certain cases, for the most part other accessory factors, as indicated, had also to be combated; in this respect this method is far inferior to roentgen ray irradiation whenever the latter is indicated in the management of the disease. That the effects of the slush treatments were purely local and often not permanent was indicated by the observation of recurrence in 11 of the group of 48 successfully treated patients, a minimal incidence of 25 per cent recurrences. It is true, in a degree, that so far as our material was concerned, the recurrences were generally milder than the original attack. In some patients, also, we observed that the skin would begin to break out at the end of the week, and it became necessary to control these lesions by advising the use of a mild white lotion.

As to the manner of action of slush on the pustules and papulopustules, it seems likely that the mixture acts in the following manner: (1) It causes freezing of the tissue, which is succeeded by an increased vascularity as the part thaws out, and (2) there is probably a mechanical drying effect on the pus and sebaceous matter due to a congealing action. We do not know whether freezing has any bactericidal properties in these cases. It is believed by some that the acetone in the mixture dissolves the sebum, permitting sulfur to be carried into the follicles, and it is further alleged that this deposition of sulfur has an inhibitory action on the sebaceous secretion; we are, however, uncertain that this is actually the case.

In order to clarify the situation further, we attempted to observe the effect of slush on the comedo, the elementary lesion of acne vulgaris. The comedo responded but slowly, if at all, to this type of treatment. Without adjuvant measures these lesions showed practically no improvement after a minimum of six weeks of applications of slush. It was

found best to have the comedos removed in the conventional manner just before the slush mixture was to be applied. In one instance, for example, the comedos kept recurring constantly, despite the preliminary extraction of them; in other cases it seemed the extraction of them, combined with applications of slush, apparently permitted the skin to remain free of comedos for a longer time. But we cannot draw this conclusion with any degree of confidence, as our material was insufficiently controlled in respect to this point. On the whole, then, no particular claims can be advanced regarding the efficacy of this method in the treatment of the elementary lesion of acne vulgaris, and the therapy of these often troublesome lesions resolves itself still into a matter of conventional routine measures.

2. *Cystic Acne.*—The following data are based on a group of 24 patients with a condition that, for purposes of convenience, may be classified under two heads: (*a*) the soft, cystic type and (*b*) the hard, indurated type. The occurrence of transitions and combinations makes an absolute division difficult, and we have therefore been guided by what we considered to be the outstanding lesion in each case.

A. Of the soft, cystic variety, the type characterized by more superficial pustular collections, there were 6 instances under our observation. The average number of applications of slush was twenty-one. Only 2 patients responded well; 3 responded poorly, if at all, and the remaining patient after receiving six applications of slush was referred for roentgen ray therapy in view of the poor result obtained by the former method. The last patient mentioned, from the beginning of his roentgen ray treatments, responded strikingly, and after receiving eight exposures of 75 r each, the condition of the skin was about 85 per cent improved. There can be no doubt that this was a definite instance in which roentgen ray therapy proved infinitely superior to cryotherapy. It may be noted, also, that in the group of 3 patients who gave similar unsatisfactory responses to a large number of treatments with the slush mixture, 1 patient had previously received twelve roentgen ray irradiations (75 r each), injections of chorionic gonadotropin (antuitrin S) and various local measures, and an additional fifty-one treatments with slush failed to influence the condition to any definite degree.

Whatever temporary results were achieved in this group could be attributed more reasonably to the use of such accessory measures as wet dressings, surgical incisions whenever essential and local care in the manner already mentioned.

B. With cystic acne of the hard indurated type we observed 18 patients. The average number of applications of the slush mixture was twelve. Of this group 17 responded especially well to this form of treatment in combination with adjuvant measures; it is of interest to note that 7 of the patients had previously had roentgen ray irradia-

tions, ranging from four to sixteen or more exposures, without substantial improvement. Only 1 patient responded poorly. In the group with successful results 4 had recurrences, which appeared about a month or more after discharge, but they responded rapidly to renewed treatment.

This type of so-called acne often proves one of the most troublesome to treat, owing to its obstinate, persistently recurrent character and the frequent association with hard keloid-like masses, which may proceed to the formation of large disfiguring scars. This is especially important when the face is affected. While in some instances the condition responds to roentgen ray irradiation, in a fairly large percentage it does not yield satisfactorily to this treatment modality and after a series of from six to eight or more exposures the patients become discouraged and begin to seek other methods of treatment. As in the papulopustular type of acne, the conclusions regarding the unusually high incidence of successful results in this group of cases must be tempered by acknowledging the importance of the adjuvant measures used. The most valuable accessory measures were the use of local wet dressings (solution of sulfurated lime N. F.) and surgical incision for the drainage of underlying purulent collections.

The application of the slush mixture was somewhat modified as compared with the technic used for the papulopustular type of acne. Attention was centered chiefly on the individual nodules, which received in some cases as many as twenty blanching applications with moderate pressure or were kept "frozen" for approximately thirty seconds by sliding the tampon over their surface, thus avoiding the adjacent normal skin. The latter procedure especially resulted in a severe inflammatory reaction, followed by peeling or even blistering; this was tolerated in all the cases submitted to this procedure and no scarring was observed in any instance. Under these circumstances the action of the slush seems to be twofold: (1) In some lesions absorption seemed to be favored, owing to the increased inflammatory reaction provoked by the thawing-out process, which happened chiefly in the relatively small lesions and was noted to occur in some instances after as few as three treatments; (2) in larger lesions the inflammatory reaction seemed to promote softening of the area treated, so that a linear incision could be made with a reasonable chance of securing adequate drainage of the enclosed pus; when incisions are made too early in the course, the observer is likely to find only indurated, edematous and bleeding tissue, without a definite localizable collection of pus.

In all likelihood the condition in these cases is related to the entity described by O'Leary and Kierland [4] as pyoderma faciale and is also

4. O'Leary, P. A., and Kierland, R. R.: Pyoderma Faciale, Arch. Dermat. & Syph. **41**:451 (March) 1940.

the counterpart of that regarded by Ramel, on insufficient grounds, as being a tuberculous condition, merely because the thick pus enclosed generally yields a sterile culture. It is our belief that the judicious use of slush, incision, wet dressings and local care, each employed according to their indication, offers in many cases a reasonable chance for control of this type of infection and increases the possibility of a better cosmetic outcome. On the whole, then, the successful results in this small group of cases can be attributed not to slush therapy alone but to its use in combination with other measures. We believe that the same principles would apply in the case of acne conglobata.

3. *Scars in Acne Vulgaris.*—In 7 of the 69 patients exhibiting papulopustular acne there were scars which remained visible after the active lesions were gone. These were treated with from twelve to eighteen additional applications of slush in an effort to improve the appearance of the small cicatrices, but in our opinion the results were negligible. Similar treatment was carried out in 2 instances in which there was only scarring as the end stage of old healed acne; the final results were also unsatisfactory. An average period of from three to four months of such therapy seemed not to bring about any striking improvement or even sufficient progress to warrant further treatment. However, Karp is of the belief that at least eight months of applications of slush is essential before real improvement becomes manifest, while in the case of scars due to smallpox there are required from seventy-five to eighty treatments. In treating scars it is best to use a mixture composed of only acetone and solid carbon dioxide; sulfur is left out, as it may interfere with the particles of snow that are alleged theoretically to be retained by the peripheries of the cicatrices. It is for this reason that light rapid friction without pressure is advocated rather than the ordinary routine technic. It is believed that by this modification the edges of the scars retain small fragments of the slush while the depth remains untouched, thus rendering the central depression in the cicatrix relatively less deep in relation to the surrounding parts. The mechanism would then be analogous to what happens when the edges of scars are painted with phenol or trichloroacetic acid. If future observations indicate that this is more than a temporary deceptive result, the treatments with slush, no matter how extended a period of time may be necessary, would be indicated, for defects of this type may blight the existence of many a girl or woman. However, substantiation of these claims is needed, and the final results must be striking enough to overcome legitimate skepticism and permanent enough to offset criticism on the score of temporary deception.

4. *Acne Excoriée des Jeunes Filles.*—A patient with this condition (not included in the statistics) was successfully treated with the slush mixture, but we believe that this was accomplished chiefly because of

the psychologic effect which the method seemed to produce in this particular patient.

5. *Unfavorable Results.*—A. Two patients had an immediate urticarial whealing reaction accompanied by severe burning sensations over the treated areas. This persisted several hours. It is interesting that the application of solid carbon dioxide to the skin of the forearms of these patients also produced the same manifestations, and it is possible that the condition in these cases represents what is popularly known as "allergy to cold."

B. Severe edema of the face followed the application of slush in the case of a girl aged 17. The edema persisted for two days, even though

Fig. 1.—Depigmentation in a Negress following peeling with cryotherapy.

the treatment was not sufficiently intense to produce peeling. After this, the back was treated in a similar manner, and, indeed, strong peeling doses were subsequently given, without any untoward effects. On the other hand, a mild application of the slush to the skin of the face again produced a return of the unpleasant manifestations described.

C. Depigmentation of both cheeks and forehead of a young Negress followed the application of a peeling dose. The depigmentation persited in its original state for three weeks, then required some six weeks for complete recovery to normal. In another Negress, whose chin was treated by this method, depigmentation lasted some six months, and the center of the lesion is slowly resuming its original pigmented state. It was also noted that patients having a deep tan would commonly show

a mottled blanching when the peeling reactions were intense. As solid carbon dioxide is often used in dermatologic practice for the purpose of blanching pigmented areas, for example, certain pigmented nevi, the aforementioned reaction is understandable, and for this reason we advise caution in the treatment of Negroes afflicted with acne or patients with a fresh sun tan. We are unable to state whether the depigmentation seen in dark-colored persons may not become permanent in some cases; nor are we certain about the converse, that is, whether hyperpigmentation may not occasionally occur in light-colored persons.[5] These results suggest the use of this method, but with caution, in the treatment of

Fig. 2.—Purpuric mottling as result of application of a trial dose to the back of a man.

chloasma and other pigmentary anomalies in which the pigmentation is attributable to an increased production of melanin in the epidermis.

D. Blotchy purpura-like patches appeared on the skin of a patient[6] who received only a trial application of slush. These patches persisted for more than a month in their original state, and after a lapse of over six months areas of depigmentation and blotchy hyperpigmentation were still evident along the edges of the involved areas. It was found that

5. MacKee, G. M.: Personal communication to the authors. Dr. MacKee stated that he had seen a young woman in whom pigmentation followed slush therapy and lasted for two or three months, and for this reason treatment had to be discontinued.

6. Botvinick, I.: Unpublished data.

a mild application, without pressure, was instantly followed by a recurrence of the phenomenon. On the other hand, ordinary ice and cold water had no such effect. Whether this phenomenon is an example of unusual capillary fragility elicited by the application of solid carbon dioxide or of other ingredients contained in the slush mixture we are unable to state.

E. In a girl aged 23 previously treated with roentgen ray irradiation and topical remedies, there appeared a cropping out of pustules after the slightest applications of slush to the face. The patient, on the other hand, tolerated lotions containing sulfur but gave a history of having had recurrences of acneform pustules whenever the cold weather set in.

F. A few other patients would not tolerate the treatment, for it seemed to cause them unpleasant sensations.

As these observations have been made on the basis of a study of only 95 patients, it is likely that other investigators will meet with still other types of unpleasant local disturbances.

COMMENT

1. *Contraindications to the Use of Slush.*—A. No applications are to be made on patients showing smooth, elevated pigmented nevi or dark, so-called "beauty" spots devoid of hair, for in such instances one may be possibly concerned with potentially malignant lesions.[7]

B. Acne vulgaris in any form in the Negro appears to be a relative or absolute contraindication to the use of cryotherapy.

C. The immediate use of applications of slush after roentgen ray irradiation is regarded as contraindicated; about a month should be allowed to elapse before treatments with solid carbon dioxide are pursued.

D. A sun tan in patients constitutes a relative contraindication.

E. Those who show undue intolerance to the first application of slush are likely to prove intolerant to further treatments.

2. *Indications for Slush Therapy.*—The slush method of therapy is indicated for the following types of patients:

A. Patients who have not responded to adequate amounts of roentgen ray irradiation and other local measures.

B. Patients who have previously responded to the aforementioned measures and are afflicted with recurrences of variable degree and in whom it seems likely that further roentgen ray irradiation or topical therapy may be unavailing.

7. Traub, E. F., and Keil, H.: The "Common Mole": Its Clinicopathologic Relations and the Question of Malignant Degeneration, Arch. Dermat. & Syph. **41**:214 (Feb.) 1940.

C. Patients below the ages of 17 or 18, in conjunction with or independent of other local forms of treatment.

D. Patients with a dry skin, such patients forming a small definite group less likely to respond to either roentgen ray irradiation or other local measures; however, it must be admitted that there are no absolute rules in these cases (the slush may be applied to individual lesions).

E. Patients with resistant acne indurata, especially of the hard deeper type, in whom the skin shows relatively little inflammatory reaction or an inflammatory action of a sluggish type, as a result of which there seems to be difficulty in resolving deeply seated purulent collections (slush therapy is an important adjuvant measure, having the advantage in the fact that applications can be made to individual areas).

F. Patients who refuse roentgen ray therapy when it is clearly indicated (such refusals are generally made because of ill founded notions respecting the incidence of scarring and other effects, and the patient should be impressed that slush therapy promises less than would be expected from the average results achieved by roentgen ray irradiation).

G. Patients with acne excoriée des jeunes filles (this method would seem to promise results in view of the opportunities to impress the patient psychologically).

H. Patients with scars, provided that certain claims advanced can be substantiated.

SUMMARY AND CONCLUSIONS

An attempt has been made to define the circumstances under which cryotherapy can be used to its best advantage in the treatment of various types of acne vulgaris.

Cryotherapy is believed to be an important adjuvant measure for some types of acne, especially the papulopustular and the hard, indurated form.

Slush therapy is in no sense a substitute for roentgen ray irradiation when the latter is indicated; in certain instances the use of slush may be substituted for roentgen ray irradiation under conditions that have been defined in this paper.

Recurrences are encountered in at least 25 per cent of the cases; in some instances recurrences seem to be milder than the original condition, but that is not an easy matter to judge accurately.

Its use in the cure or alleviation of scarring is not yet firmly established.

Its use in the treatment of acne vulgaris seems to be promising, but no more than that can be said from our studies.

The unpleasant phenomena and the contraindications in a few cases have been recorded.

LATE SYPHILIS WITH RARE ORBITAL GUMMA

REPORT OF A CASE

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Lesions involving the eyes or their external musculature are common in acquired and in congenital syphilis. They may present themselves as local lesions in the eyeball or orbit or may be local manifestations of intracranial infection.

Syphilitic involvements of the eye and adnexa most frequently seen [1] are: Primary chancre of the lid and conjunctiva; interstitial keratitis, congenital and acquired; iritis, in acquired and in congenital infection; choroiditis, focal and disseminated; retinitis; changes in the optic disk, without intracranial involvement; atrophy of the optic nerve; paralysis of the ocular nerves by a gummatous process in the orbit, basal syphilitic meningitis, cerebral gumma or syphilitic neuritis of the nerve trunks, and nuclear degeneration from disease of the supplying vessels.

Gumma of the orbit is a rare condition.[2] It occurs in two forms:

A. It may be a condition of the periosteum, especially in the upper and outer and the inner and lower quadrants of the orbit. Early it causes thickening of the structure and later necrosis, with possible breaking through the skin and formation of a sinus.

B. A gumma deep in the orbit may give rise to symptoms from pressure on the optic nerve or cause symptoms similar to those caused by other orbital tumors, namely, exophthalmos and muscular paresis.

In the differential diagnosis of proptosis, the diagnosis of gumma of the orbit is one of the most difficult for ophthalmologists to make. The condition has been reported as showing unilateral and bilateral involvement, the onset not being simultaneous in each orbit. Fine [3]

From the Department of Ophthalmology and the Department of Dermatology and Syphilology, General Hospital, Cincinnati.

1. Moore, R. F.: Medical Ophthalmology, Philadelphia, P. Blakiston's Son & Co., 1925, p. 234.

2. Collins, E. T., and Mayou, M. S.: Pathology and Bacteriology of the Eye, ed. 2, Philadelphia, P. Blakiston's Son & Co., 1925, p. 563.

3. Fine, M.: Gumma of the Orbit, Am. J. Ophth. **22**:595, 1939.

reviewed the literature and found 24 cases of gumma of the orbit, to which he added 2 cases, one of a retrobulbar gumma and the second of a syphilitic periostitis of the orbit. Of the 24 cases, in only 5 was the condition bilateral. Kemp [4] observed orbital syphilis in only 5 of 6,000 cases of syphilis at Johns Hopkins Hospital. Fine observed gumma of the orbit in only 2 among 40,000 patients seen in the ophthalmic clinic at Stanford University. According to Birch-Hirschfeld,[5] syphilis of the orbit constitutes 0.01 per cent of all ocular disease. At the Cincinnati General Hospital, where 1,000 new cases of syphilis are observed each year, the case to be reported is the first of gumma of the orbit on record in the past twelve years.

Since the advent of antisyphilitic therapy, gummas of the orbit are becoming much more rare. There is usually a history of acquired or congenital syphilis of some years' duration or of inadequate treatment.

Frequently the first symptom is severe headache, worse at night, located in the eyeball or radiating to the forehead. A positive Wassermann reaction is important but is not always present. The proptosis which occurs is not reducible by pressure on the eyeball. Impairment of the function of one or more of the ocular muscles occurs, depending on the situation of the gumma, its size and the duration of the lesion. Roentgen examination is usually of no value. The response of the lesion to antisyphilitic therapy is diagnostic and dramatic.

REPORT OF CASE

A. K., a 31 year old white woman, was admitted to the Cincinnati General Hospital in September 1938, with acute alcoholism and impending delirium tremens.

The patient gave a history of a lesion in her throat of one year's duration. Six months prior to admission she was struck with a fist on the left side of her face, and afterward she complained of weakness and numbness of this side of her face. Two months before admission she noticed a small sore on the bridge of her nose, and at the time of admission she complained of a purulent discharge and occasional hemorrhage from her left naris. One month before admission the left upper eyelid became weak, and at the time of admission she was unable to elevate it. She complained of pain in the left orbit.

In the past history there were no significant facts or any record of venereal disease.

The physical examination showed that she was acutely ill and under the influence of alcohol. Her pulse rate was 120, the respiratory rate 24, and the blood pressure 130 systolic and 100 diastolic. Her temperature was 100 F.

Examination of the eyes revealed: Uncorrected vision in the right eye was 20/30 — 1 and in the left eye 10/200. The right eye was normal in all respects. The pupil was round and 4 mm. in diameter and reacted to light, in accommodation and consensually. The left upper lid was swollen, and there was com-

4. Kemp, J. E.: Syphilis of the Orbit, Arch. Dermat. & Syph. **8**:165 (Aug.) 1923.

5. Birch-Hirschfeld, cited by Fine.[3]

plete ptosis. There was anesthesia of the upper lid in the region supplied by the supraorbital division of the ophthalmic branch of the fifth cranial nerve. The conjunctiva was clear. The cornea was clear and insensitive to cotton. There was no evidence of vascularization by slit lamp examination. The left pupil did not react to light or in accommodation; it was round and 5.5 mm. in diameter. In the fundus the retinal veins were slightly engorged. The arteries were normal in caliber. Tactile tension was normal. The eyeball was fixed in the primary position, with no ocular rotation in any direction (fig. 1, *1* and *2*).

With an exophthalmometer there was 5 mm. of proptosis of the left eye (fig. 1, *2*). The proptosis could not be reduced by pressure on the eyeball. There was no pulsation, and no bruit was audible over the left eye.

A field of vision on the Ferree-Rand perimeter with a 3 mm. white test object revealed a concentric constriction of the nasal field for the left eye. The field for red with a 3 mm. target was decidedly constricted, and with a 3 mm. blue target the field of vision was within 5 degrees about the fixation point.

Fig. 1.—Case of late syphilis with rare orbital gumma. *1,* on admission in September 1938, with gumma of the nose, complete ptosis and proptosis; *2,* fixed dilated pupil; *3,* June 1939, showing improvement of the ptosis and proptosis of the left eye and a small fistula into the nose; *4,* January 1940, after a nasal plastic operation and intensive antisyphilitic therapy.

For the right eye the field of vision was normal for form and colors. A central field of vision on a Bjerrum screen at 1 meter with a 1 mm. white target revealed slight enlargement of the blind spot of Mariotte in the left eye.

The nasal examination revealed an ulceration of the mucosa of the cartilaginous septum, with a sanguinopurulent discharge. There was a hard granular mass extending down from the olfactory fissure, which obstructed the left nostril. Externally there was a deep ulcerated lesion, 2 by 2 cm., on the left side of the nasal bridge (fig. 1, *1*), which was covered by a thick yellow scab. The edge of the ulcer was rough and undermined and bled easily when the scab was removed.

The examination of the mouth revealed an absence of upper teeth, carious lower teeth and poor oral hygiene. The uvula was absent, as was part of the soft palate on the left side of the midline. The edges were raw. There was a postpharyngeal mucopurulent discharge.

The remainder of the physical examination gave negative results.

The following laboratory data were obtained: Examination of the blood showed 12 Gm. of hemoglobin per hundred cubic centimeters and 4,000,000 red blood cells and 9,000 white blood cells per cubic millimeter. The differential count was normal.

Urinalysis showed a 2 plus reaction for albumin and 4 to 5 white blood cells and 5 to 10 red blood cells per high power field.

A cervical smear showed gram-negative intracellular diplococci.

The cerebrospinal fluid was clear. There was a slight increase in pressure. The result of a Pandy test was negative. There were 5 cells per cubic millimeter. The Wassermann reaction was negative.

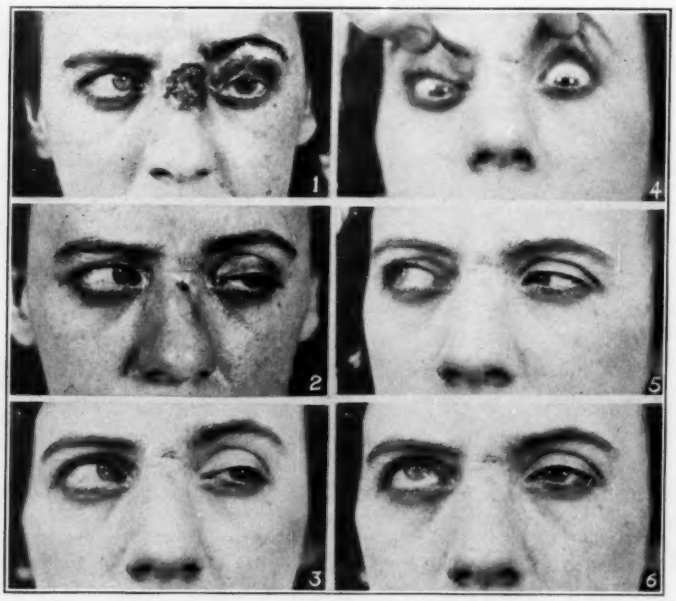

Fig. 2.—Movements of the muscles of the eye. On looking to the left: (*1*) with fixed left eyeball at time of admission, (*2*) nine months later and (*3*) fifteen months later. January 1940, showing (*4*) improved movements of the left inferior rectus, (*5*) improved movements of the left internal rectus and (*6*) paresis of the left superior rectus muscle.

A Kahn test of the blood gave a 2 plus reaction, and a Wassermann test, a 3 plus reaction.

Roentgen ray examination (Dr. B. Felson) showed no significant abnormality of the orbit on the left side. The optic foramens were normal. The skull was essentially normal. The bony nasal septum showed evidence of destruction in the central portion.

From the aforementioned observations the diagnosis was (1) late syphilis, with (*a*) gumma of the nose, (*b*) gumma of the left orbit with total ophthalmoplegia, proptosis and involvement of the ophthalmic division of the fifth cranial nerve and (*c*) gumma of the uvula and soft palate, and also (2) gonorrheal endocervicitis.

The patient was given intensive antisyphilitic therapy, which included the administration of neoarsphenamine, insoluble bismuth (bismuth subsalicylate) and potassium iodide.

In November, two months after the start of antisyphilitic therapy, there was a decrease in the proptosis of the left eye to 3 mm., but the ophthalmoplegia remained total. There was definite improvement in the nasal lesion. The granulating mass coming from the olfactory fissure had receded, and the septal ulceration was healing. The throat was completely healed.

In December the left upper lid had recovered some of its function and could be raised about 3 mm. The left globe showed returning rotations, the maximum rotation being in the field of the internal rectus, with the superior and inferior oblique muscles also active. The corneal sensation on the left was present but diminished.

In December the patient was discharged from the hospital and referred to the venereal disease clinic for further antisyphilitic therapy.

In June 1939 the uncorrected vision in the right eye was 20/20 and in the left eye 20/20 — 1. The left eye showed further improvement in the ptosis of the lid. The internal rectus muscle was normal. The external rectus, inferior and superior oblique and inferior rectus muscles were still paretic but greatly improved (fig. 2, *2*). The superior rectus muscle showed little improvement and was paretic. The pupil was 3 mm. in diameter and did not react to light but reacted in accommodation and consensually. The cornea was sensitive to cotton. The proptosis was 1 mm. (fig. 1, *3*).

There was a small discharging sinus on the nasal dorsum (fig. 1, *3*), through which sequestrums were occasionally extruded. The patient was readmitted to the hospital, and a piece of skin full thickness from the postauricular region was grafted onto the bridge of the nose by Dr. S. Iglauer.

In January 1940, with the patient still getting antisyphilitic therapy, the changes in the left eye had become stationary. There was a decided improvement in all ocular rotations of the left eye with the exception of the field of the superior rectus muscle (fig. *2, 3, 4, 5* and *6*). Her only complaint was diplopia on looking up and to the left and to the extreme left. The skin graft on the nose had closed up the fistula (fig. *2, 3*). The healing was by primary intention. A roentgenogram of the orbit and optic foramens was essentially normal.

COMMENT

In the literature reviewed we have been unable to find another case of gummatous involvement of the orbit, nose and throat. The fact that photographic records of progress are available makes the case more interesting.

The elevated temperature at the time of admission suggested the possibility of an inflammatory cause for the proptosis, as did the foci of infection in the nose, but the presence of normal-appearing conjunctiva ruled this out.

Trauma to the left side of the face was no doubt a factor in the localization of the lesion and suggested the possibility of an arteriovenous aneurysm. This was the tentative diagnosis made at a neurologic conference. The fact that the eyeball was not replaceable by pressure

on the orbit, the absence of pulsation, bruit or any "buzzing" in the head and the presence of other late syphilitic lesions decided us against this diagnosis.

As with other space-taking lesions in the orbit, the position of a lesion, whether inflammatory, malignant or vascular, causes displacement of the eye away from the lesion, and one at the apex of the orbit pushes the eye forward. This was the condition in our patient.

At the apex of the orbit are three openings through which important structures pass. The optic foramen carries the optic nerve and the ophthalmic artery. The superior orbital fissure transmits the ophthalmic vein, the third, fourth and sixth cranial nerves and the first branch of the fifth cranial nerve, supplying fibers to the skin of the upper eyelid and forehead. The sphenomaxillary orifice is the entrance for the second branch of the fifth cranial nerve, the sensory nerve to the lower lid and cheek.

In our case the lesion must have been in the region of the superior orbital fissure and pushing forward. All the nerves passing through this foramen were involved, and the slight dilatation of the veins in the left fundus suggested interference with the venous outflow of the eyeball. The anesthesia of the skin of the left upper lid pointed to involvement of the sensory nerve passing through this fissure.

The lesion must have encroached on the region of the optic foramen to explain the poor vision at the onset, along with some constriction of the nasal field of vision. This was probably slight, as the vision and field of vision returned to normal shortly after antisyphiltic therapy was started. Hotz [6] reported a case of syphilitic orbital periostitis in which there were optic neuritis and almost complete loss of vision. After potassium iodide and mercury inunctions the vision returned to almost normal.

Carlin,[7] in discussing lesions deep within the orbit or posterior to the orbit, stressed unilateral disturbances of the pupillary reaction to light. In our case the pupil remained fixed to light in spite of adequate antisyphilitic therapy.

Pressure on the orbital vessels explains the swelling of the left eyelids at the time of admission to the hospital. This receded as soon as treatment was started.

Roentgen ray examination repeatedly showed no abnormalities; it is usually of no value in the diagnosis of orbital gumma.

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6. Hotz, F. C.: A Case of Syphilitic Orbital Periostitis and Optic Neuritis in Which Vision Was Almost Extinguished but Completely Restored, Ophth. Rec. **12**:329, 1903.

7. Carlin, C., cited by Kemp.[4]

The skin graft filled in the fistula in the nose, and the lesion healed by primary intention, indicating that the patient was receiving adequate antisyphilitic therapy.

From the time of admission to the hospital to May 1940 the patient had 24 Gm. of neoarsphenamine and 5.85 Gm. of bismuth subsalicylate.

SUMMARY

A case of gumma of the orbit associated with multiple gummas of the nose and throat is described. The lesion in all probability was a periosteal gumma at the apex of the orbit. There was an excellent response to therapy and also to the plastic operation for the nasal fistula. The observations in the case are discussed with relation to the anatomy of the orbit.

Photographs were taken by Mr. J. B. Homan, assistant professor of Medical Art, Cincinnati Medical College.

BLACK HAIRY TONGUE

A REPORT OF THREE CASES

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Black hairy tongue (nigrities) is a hypertrophy which may involve all or part of the filiform papillae of the medial part of the dorsum of the tongue. It was first described by Rayer in 1835 under the term *discolorations pigmentaires.* In 1869 Raynaud reported several cases of it as a new entity and described the appearance of the tongue as a field of corn laid low by the wind.

Raynaud ascribed a parasitic cause to black hairy tongue, and this theory was confirmed by Laveau, Lancereaux and Dessois between 1876 and 1878. Gallois, Richter and Fereol, on the other hand, maintained that the presence of spores and mycelium was accidental rather than etiologic. Dessois, in 1878, and Gettheil, in 1889, unsuccessfully carried out inoculation experiments on their own tongues. Rayer, in his original description in 1835, mentioned the impossibility of inoculation and stated that spores morphologically similar to those present on black hairy tongue were present on normal tongues.[1]

Weidman,[2] in 1928, reported a relation between black hairy tongue and trichomycosis. He considered the growth of the fungus on the tongue to be due to the fact that the development of the micro-organism is favored by the presence of keratin, which he found both on the hair of experimental monkeys and on the normal filiform papillae of the tongue of man. Thompson and Montgomery,[3] in 1929, described an organism apparently related to the one found by Weidman and belonging to the classification Actinomyces.

It is generally agreed that the most common cause of black hairy tongue is some micro-organism, though there is still no unanimity of opinion as to what it is. Other possible causes include silver nitrate, chromic acid, syphilis, dyspepsia, tobacco, irradiation and various inflammatory lesions.

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1. Swinburne, G.: Black Hairy Tongue, J. Laryng. & Otol. **54**:386 (July) 1939.
2. Weidman, F. D.: The Affinities Between Black Tongue and Trichomycosis, Arch. Dermat. & Syph. **18**:647 (Nov.) 1928.
3. Thompson, L., and Montgomery, H.: An Organism Isolated from Two Cases of "Hairy Tongue," J. A. M. A. **93**:114 (July 13) 1929.

Extensive studies of black hairy tongue have been made by Heidingsfeld [4] in 1910, Weidman [2] in 1928 and Swinburne [1] in 1939. The latter report is so complete in all details that there is no justification for a repetition of the study at this time, particularly as the author, from his personal observation of 16 cases and two pathologic specimens, spoke with an authority with which the subject had not previously been discussed.

Swinburne's observation of 15 of his 16 cases within fifteen months indicates that the disease is by no means as infrequent as it is generally supposed to be. Minor degrees, in his opinion, are likely to be overlooked. The disease occurs in adults, usually middle aged, and is considerably more common in males than in females. It is not usually painful but may be associated with a painful inflammatory or neoplastic lesion.

The extensive bacteriologic studies of Swinburne suggest that the microflora found in black hairy tongue should be regarded as coincidental rather than causal. He points out that the intimate association of mycelium in the folds of the epithelial layer is probably related to the chemical reaction. When the disease begins, it may be responsible for continued irritation, but there is no penetration of the tissues, and Swinburne's theory is that the condition is the result of metaplasia of the epithelium of the tips of the filiform papillae.

Histologic studies were possible in 2 of Swinburne's cases, which again is an unusual experience. The filaments of black hairy tongue were found to consist externally of a zone composed of mycelial elements and chains of cocci surrounding an inner mass of keratin. In many instances the center of the filament consisted entirely of flattened keratinized non-nucleated cells; in others there was an incomplete core of connective tissue covered by epithelial cells resembling those of the rete Malphigii. Since the filaments have none of the true characteristics of hair, Swinburne considered the term black hairy tongue to be a misnomer.

REPORT OF CASES

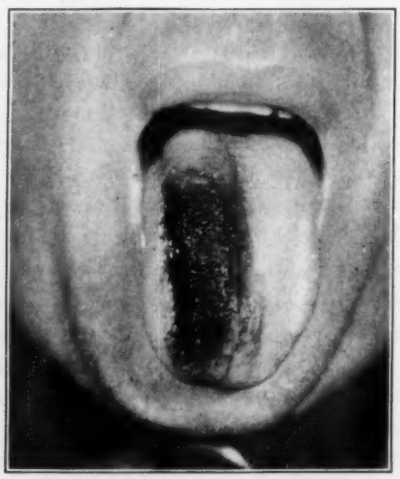
CASE 1.—A. G., a white railroad mechanic aged 40, had a black hairy growth on his tongue, accompanied by pain and swelling, for four months. He stated that the growth had first been observed a few days after he had cleaned an old tool shed and in the course of the work had laid his cigaret on a piece of wood covered with the same type of hairy growth which had later appeared on his tongue. He had brought the wood with him and was curious to know whether he had contracted his disease from it. The facts of his previous history were irrelevant.

Physical examination revealed no abnormality except for the tongue, the entire upper surface of which was coated with what seemed to be a thick, black hairy growth. The color was deepest in the center and faded to light brown at the

4. Heidingsfeld, M. L.: Hairy or Black Tongue, J. A. M. A. **55**:2117 (Dec. 17) 1910.

edges. The whole tongue was edematous, and the lower teeth left distinct impressions on the reddened lateral margins. The right sublingual gland was swollen and the orifice reddened. The insertion of a sound sufficiently dilated the orifice of the duct to permit the expression of a small calculus, followed by a profuse discharge of thick, clear mucoid material, after which the patient's discomfort was partially relieved.

Urinalysis, study of the blood, a Wassermann test of the blood, examination of the stool and roentgenologic examination of the chest revealed no abnormalities. Microscopic examination of scrapings from the tongue revealed keratinized filaments of epithelium and gram-positive bacilli, which could not, however, be identified as fungi. A culture of the scrapings on Saboraud medium revealed Monilia albicans and the same organism was cultured from the wood on which the patient had laid his cigaret. The cultures were later examined by Dr. Rhoda W. Benham of New York, who reported the organism as M. albicans and regarded it as a contaminator.



Black hairy tongue of four months' duration (case 1).

Almost every variety of therapy was tried, without much success. Daily, biweekly and weekly scrapings of the tongue were followed by local applications of weak phenol solution, iodine, mercurochrome and silver nitrate. A severe reaction occurred within two hours after the intradermal use of a 1 : 10 dilution of a vaccine prepared from scrapings from the tongue; reactions to successive intradermal injections were only slightly less severe, and continued vaccine therapy for many weeks resulted in no demonstrable benefit.

At the end of five months of treatment an apparently spontaneous regression occurred, and the tongue became perfectly clean. A slight amount of pain over the right sublingual gland, which had persisted throughout the five months, gradually disappeared shortly after the lingual condition cleared up.

Case 2.—J. G., an unemployed white man aged 33, applied for treatment for a black hairy growth which had been present on his tongue for two months. With the previous case in mind we questioned the patient in detail, and he recollected that some time previously, while working in the yard, he had laid his cigaret on a piece of wood covered with some sort of black growth. The wood in question had

been burned, but when he was shown the specimen in case 1, he immediately identified the black growth on it as similar to that on the wood on which he had laid his cigaret.

Physical examination showed no abnormality except that of the tongue, the appearance of which resembled that of the first patient's. There was a moderate amount of swelling, and the hairy growth was black in the center and faded to light brown at the periphery.

Urinalysis, study of the blood, a Wassermann test of the blood and examination of the stool revealed nothing abnormal. Microscopic examination and culture of the scrapings from the tongue revealed M. albicans, as in case 1.

A strongly positive reaction was observed within twenty-four hours after intradermal injection of 1 cc. of a 1:10 dilution of autogenous vaccine, and successive injections, even with greatly diluted solutions, produced such severe reactions that they had to be discontinued. The resulting malaise and lassitude, as in case 1, lasted for three days. Other treatment was not effective, and when the patient was last seen, sixteen months after his first visit, the condition of the tongue was unchanged.

CASE 3.—A. L., a white woman aged 23, had been under treatment for syphilis for three years. On a semiannual visit for a check-up (including a Wassermann test), she stated that for two weeks her tongue had been black. The results of examination were similar to those in the first 2 cases. No history of contact with wood could be obtained, and attempts to culture M. albicans failed, although the microscopic picture of the scrapings was similar to that seen in the other 2 cases. The tongue cleared up within four weeks without treatment.

SUMMARY

The first 2 cases reported are of interest chiefly because of the similarity of the histories and of the cultural findings. Both patients prior to the onset of the condition had laid their cigarets on wood covered with a black hairy growth similar to the growth which later appeared on their tongues. The same organism, M. albicans, was cultured from both tongues and was found on the specimen of wood produced by one of the patients. On Saboraud medium this organism exhibited a striking gross resemblance to the long black "hairs" found on both the wood and the tongue. In this connection it is interesting to recall that Plaut,[5] who was the first to apply modern cultural technic to the study of disease caused by the group of organisms centering around Syringospora albicans, identified the mycelial form with Monilia candida Bonorden on decaying wood.

The third example of black hairy tongue occurred in a syphilitic subject and presented the same microscopic picture as in the first 2 cases, though attempts to culture M. albicans were unsuccessful. The condition regressed spontaneously, as in the first case. Therapeutic methods were unsuccessful in the first 2 cases, and vaccine therapy resulted in severe reactions.

5. Plaut, cited by Dodge, C. W.: Medical Mycology: Fungous Diseases of Men and Other Mammals, St. Louis, C. V. Mosby Company, 1935.

XERODERMA PIGMENTOSUM IN A NEGRESS

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The rarity of xeroderma pigmentosum in Negroes should be of sufficient interest to justify the report of a case in a Negress aged 19. Three cases of xeroderma pigmentosum in a family of African Negroes were described by Loewenthal and Trowell[1] in 1938. In their report, of 5 children, aged 8, 7, 3½, 2½ and 1½ years, respectively, only 2 had escaped having the disease. The second and fifth were free of cutaneous manifestations. A striking similarity in the progress of the disease was present in all the cases. When the child was 1½ years old a pruritic pigmented eruption started on the face and soon spread to other parts of the body, resulting in pigmented and depigmented patches. Telangiectasis was not present. Ocular changes appeared soon after the onset, causing total blindness in the 2 older children and visual impairment in the youngest. Tumors of the tongue were observed in the 2 older children in the third year. An erosion which seemed to be epitheliomatous occurred on the lower lip of the oldest child in a later stage of the disease. The denial of consanguinity was not fully accepted.

A case of multiple epitheliomas and pigmentary dermatosis in a Negro boy reported by Hopkins and Van Studdiford[2] in 1934 may belong in this category. It appears that no other cases of a similar nature have been reported.

REPORT OF A CASE

In December 1937 a Negress aged 17 was referred to the outpatient department of Vanderbilt University Hospital by Dr. Thomas W. Knickerbocker, with a diagnosis of xeroderma pigmentosum. This diagnosis was accepted reluctantly, since the condition had never been seen in a Negro; a profound impression that photosensitization is considered an etiologic factor made it seem unreasonable for a dark, apparently full-blooded Negress to be a victim of this disease. The presence of hyperpigmentation, hyperkeratoses, ulceration of the nose, flaccid nevoid lesions on the face, white atrophic patches involving the exposed surfaces of the body and blindness should have been sufficient evidence for making a tentative diagnosis. Favorable comment by other dermatologists and, ultimately, the report of Loewenthal and Trowell, two months later, were substantial factors in arriving at this conclusion.

1. Loewenthal, L. J. A., and Trowell, H. C.: Xeroderma Pigmentosum in African Negroes, Brit. J. Dermat. **50**:66 (Feb.) 1938.

2. Hopkins, R., and Van Studdiford, M. T.: Multiple Epitheliomas and Pigmentary Dermatosis in Negro Boy, Arch. Dermat. & Syph. **29**:408 (March) 1934.

At the age of 12 years she noted pigmented macules on the extensor surfaces of the forearms, which were not painful or pruritic. Many of the pigmented lesions were soon supplanted by depigmented spots. There was a gradual progression of this condition, and at the end of two years the arms, the face, the neck, the shoulders, the chest, the legs and the lower part of the thighs were affected

Fig. 1.—Xeroderma pigmentosum in a full-blooded Negress.

in a similar manner. The palms, the soles, the upper parts of the thighs and the lower part of the trunk were never affected. During the next five years the lesions did not spread so rapidlly, but a gradual increase in hyperpigmentation and a decided increase in depigmented patches became prominent features. Hyperkeratoses developed in all of the affected regions, but more distinctly on the face. Bleeding ulcerations of the nose began to occur more than two years ago, and in the meantime others continued to appear on various parts of the face, the chest and the legs. Both pedunculated and sessile nevoid excrescences of the face have

required removal at various intervals. Recently a large cornu cutaneum of the left upper eyelid was destroyed by electrocoagulation. Telangiectases were present in the atrophic areas, but they were not outstanding.

Within the last few months a large, nodular, fungating lesion with a foul odor appeared on the inner surface of the right leg. A small nodule of similar con-

Fig. 2.—Xeroderma pigmentosum in a full-blooded Negress.

sistency appeared on the posterior surface of the left leg. Both lesions had the gross appearance of rapidly growing epitheliomas, but this interpretation was not confirmed by biopsy, which seemed inadvisable in the presence of infection and since radiation therapy was elected as the method of treatment.

At the age of 13 her vision began to fail, first in the left eye and later in the right. The blindness was progressive, until at the time of examination light

was barely perceptible. There were extensive areas of scar formation on the cornea, keratitis and atrophy of the conjunctivas of both eyes.

The general health was always good, and at the time of examination the patient was well nourished, weighing 117 pounds (53 Kg.). Three brothers, 12, 14 and 16 years of age had very dark skins and were free of this condition. Her mother and father were cousins, had good health and appeared to be full-blooded

Fig. 3.—Section of ala nasi, showing epithelioma.

Negroes. Her mother stated emphatically that all the grandparents, as far back as she had any knowledge, had very dark complexions.

Examination of the blood showed 4,490,000 erythrocytes and 6,050 leukocytes per cubic millimeter and 12.6 Gm. of hemoglobin per hundred cubic centimeters of blood. The differential count showed: 61 per cent polymorphonuclear leukocytes, 33 per cent lymphocytes, 3 per cent eosinophils, 3 per cent large monocytes and transitionals and no basophils.

A Wassermann test of the blood and urinalysis gave negative results. The basal metabolic rate was — 17 per cent.

A small, pea-sized lesion excised from the ala of the nose on Feb. 28, 1940, was referred to Dr. Herman Spitz for microscopic study, and his report follows:

"The specimen is dark, lobulated and rather firm. The epidermis is thin and covered by cornified epithelium, which is thickest in the folds between the lobules. The stratum germinativum is smooth and pigmented. At variable distances rete pegs appear, which are usually elongated and branching in the lower portions. A few of them contain Perles's bodies. More frequently the rete pegs terminate in broad branching masses of small, round, uniformly stained cells. Similar masses of cells are found throughout the corium and in the deeper portions of the section.

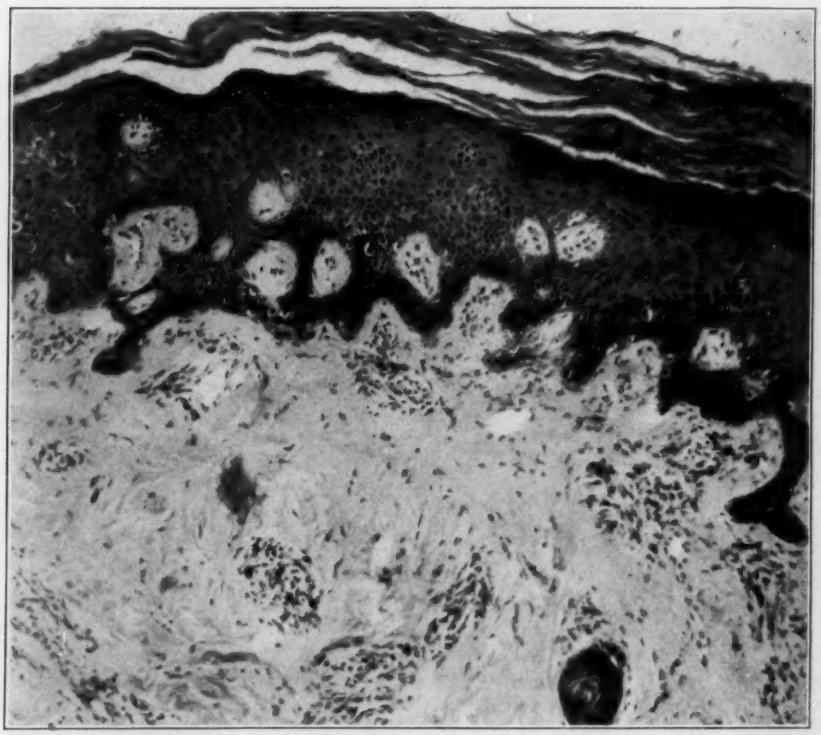

Fig. 4.—Section of pigmented macule on dorsal surface of forearm, showing hyperkeratosis, irregularity and prolongation of rete pegs, dilatation of blood vessels, perivascular infiltration, edema of cutis and numerous chromatophores in the upper portion of the cutis (hematoxylin and eosin stain, × 100).

Both fine and coarse particles of pigment are scattered throughout. Congested, thin-walled vascular spaces are present, mostly in the superficial areas. Only an occasional mitotic nucleus is observed, but considerable round cell infiltration is seen in the connective tissue stroma. The section shows carcinomatous tissue of both the basal cell and the squamous cell variety."

Additional comment on the examination of biopsy material was made by Dr. R. N. Buchanan, of the department of dermatology, Massachusetts General Hospital.

"Specimens for histologic examination have been secured from an ulceration on the nose, from a pedunculated lesion on the forehead and from pigmented

spots on the face and forearm. Sections of these specimens show a variety of changes, consisting of hyperkeratosis, irregular proliferation and prolongation of the rete ridges. At places the epidermis is thin and atrophic, with the atrophy being most marked in the prickle cell layer. Near the ulceration the epidermis shows degenerative changes with pyknotic and fragmented nuclei. There is an abundance of pigment in the cells of the basal layer of the epidermis, and in certain

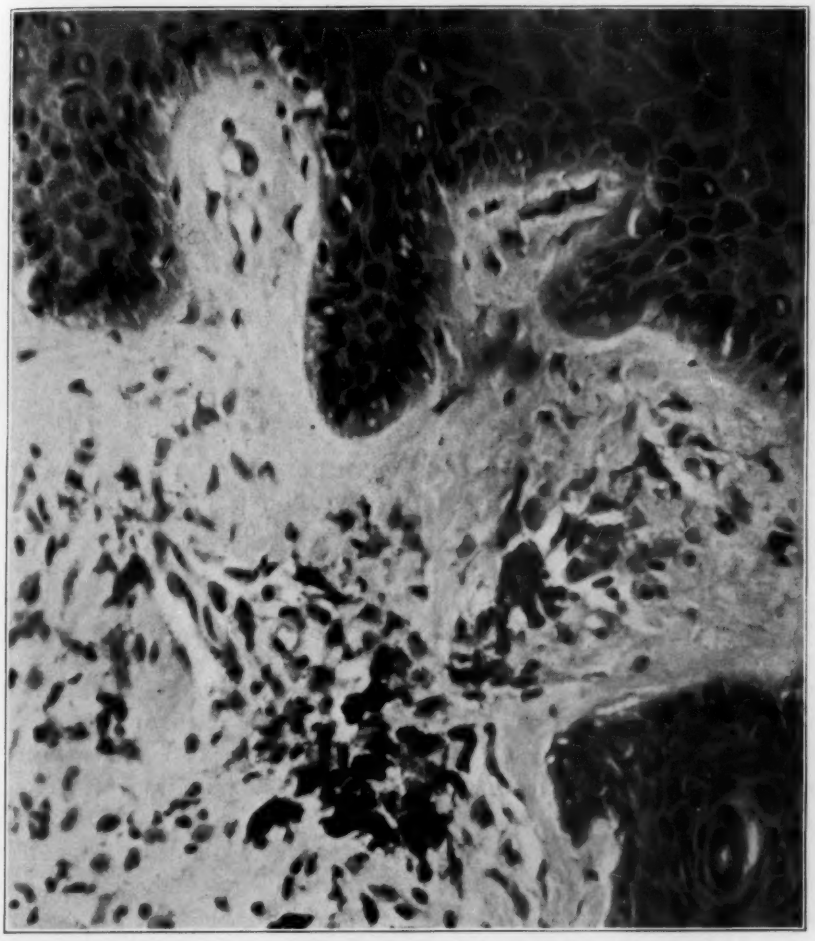

Fig. 5.—Same section as figure 4, with higher magnification (× 600).

portions of the upper part of the cutis large, irregular chromatophores loaded with brown pigment are numerous. Some edema of the corium and dilatation of the blood vessels in the cutis are present, and there is a moderate round cell perivascular infiltration. The features are consistent with the pathologic changes seen in xeroderma pigmentosum, as described by Montgomery and Reuter.[3]"

3. Montgomery, H., and Reuter, M. J.: Xeroderma Pigmentosum: Report of Mild Case with Histopathologic Studies, Arch. Dermat. & Syph. **26**:256 (Aug.) 1932.

TREATMENT OF DERMATOPHYTOSIS PEDIS WITH MEDICATED INSOLES

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In recent years dermatophytosis pedis has been receiving major consideration because of its rapid and universal spread and its frequent resistance to prophylaxis and treatment. Morginson [1] estimated that 10 per cent of all cutaneous infections treated today are due to fungi. He stated that in a recent survey at the University of Pennsylvania 59.7 per cent of 1,073 students examined were found to be infected. Legge, Bonar and Templeton [2] conducted a similar survey at the University of California and found that of 1,000 freshmen entering the university, 51.5 per cent were infected; at the end of the first semester this number was increased to 78.6 per cent.

A review of the literature on the treatment of dermatophytosis pedis reveals a variety of therapeutic procedures, with many variables in the results obtained. In their study conducted at the University of California over many years, Legge, Bonar and Templeton [3] attempted to establish the efficacy of a number of therapeutic agents, which included 30 per cent sulfurous acid in glycerin, 1 per cent thymol in glycerin, Castellani's solution, a 10 per cent ointment of benzyl peroxide, tincture of iodine and glycerin in equal parts, a 10 per cent solution of sodium thiosulfate, compound ointment of benzoic acid N. F. (Whitfield's ointment), compound ointment of benzoic acid N. F. with 1.5 per cent thymol, 4 per cent chrysarobin in chloroform, a pine oil soap solution, 5 per cent gentian violet in alcohol, 5 per cent aqueous solution of mercurochrome, 10 per cent ointment of copper oleate and ultraviolet irradiation from a quartz mercury vapor glow lamp with a special applicator. Their best results were obtained with compound ointment of benzoic acid N. F. containing 1.5 per cent thymol. They obtained complete recovery in 29 per cent of their patients thus treated, and another 35 per cent showed at least 50 per cent clinical improvement—this giving

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The treated inner soles employed in this investigation were obtained from the Climax Rubber Company, which has the patent rights.

1. Morginson, W. J.: Fungus Infection of Hands and Feet, Illinois M. J. **70**:371-376 (Oct.) 1936.

2. Legge, R. T.; Bonar, L., and Templeton, H. J.: Epidermomycosis at the University of California, Arch. Dermat. & Syph. **27**:72-74 (Jan.) 1933.

3. Legge, R. T.; Bonar, L., and Templeton, H. J.: Epidermomycosis at the University of California, Arch. Dermat. & Syph. **29**:521-525 (April) 1934.

what the authors termed satisfactory results in 64 per cent of their patients treated by that agent. Six per cent of their patients showed definite evidence of irritation. The highest percentage of cures was obtained with their tincture of iodine and glycerin. They obtained recovery in 31.7 per cent of patients treated with this agent and satisfactory improvement in another 24.6 per cent. About 2 per cent showed evidence of irritation.

The treatment of dermatophytosis of the feet should be based on a comprehensive knowledge of the many problems arising in this type of infection. It has been established that the causative fungi frequently lead a prolonged and hardy life, with a resting spore age of indefinite duration and latent virulency. Parkhurst [4] stated that its spores can survive as long as twenty-five years on glassware. The fungus, with its predilection for the interdigital spaces, causes local irritation and inflammation, maceration of the skin and increased perspiration. Frequently an objectionable odor accompanies the infection, due to the putrefaction of the excessive perspiration and to the macerated epidermis. Because of the nature of the causative fungus, treatment must necessarily be constant and prolonged. The employment of strong antiseptics is, as a rule, contraindicated, because frequently they have no effect on the mycelia and often produce local injury to the skin. Souter [5] and others advocated an ideal, hypothetic therapeutic agent which should possess the following characteristics: (1) ease of application, (2) fungicidal or at least fungistatic action, (3) the ability to penetrate to the fungus in normal or pathologically altered structure of the epidermis, (4) nonirritation of the skin, (5) the ability to lessen perspiration and to prevent its putrefaction and (6) the ability to deodorize.

FUNGISTATIC EFFECTS OF MEDICATED INSOLES

Recently Kahn and Carroll [6] have demonstrated that rubber containing 8-hydroxyquinoline was bacteriostatic for many organisms, particularly the staphylococcus. I have demonstrated the practical application of this finding in the treatment of impetigo contagiosa.[7] On further experimentation Carroll and his co-workers found that the addition of parachlorometaxylenol and chlorthymol to the rubber base combination imparted definite fungistatic properties to this substance. A method was then devised to render an ordinary leather insole fungi-

4. Parkhurst, H. J.: Treatment of Ringworm of the Feet, Ohio State M. J. **34**:288-291 (March) 1938.

5. Souter, J. C.: A Clinical Note on Fungus Infection of the Feet, Proc. Roy. Soc. Med. **30**:1107-1116 (April) 1927.

6. Kahn, M. C., and Carroll, R.: Personal communication to the author.

7. Seldowitz, M.: Treatment of Impetigo Contagiosa with Rubber Containing 8-Hydroxyquinoline, Am. J. Dis. Child. **59**:67-75 (Jan.) 1940.

static. The air in the pores of the leather was evacuated and replaced with rubber. This rubber was then impregnated with 8-hydroxyquinoline, parachlorometaxylenol and chlorthymol.

It was found that this leather-chemical compound was definitely fungistatic for Trichophyton interdigitale, Trichophyton rosaceum and Trichophyton rubrum. The following experiments illustrate the fungistatic effects of these medicated insoles on T. interdigitale. This fungus was chosen for demonstration because it is the most frequent cause of dermatophytosis pedis. The medium consisted of Sabouraud dextrose agar (peptone 1 per cent, dextrose 4 per cent and agar 1.5 per cent with the p_H adjusted to 5.8), 20 cc. in a glass top Petri dish. The inoculum consisted of 1 cc. of a heavy fresh suspension of spores of the organisms. The material to be tested was washed with a sterile cotton swab and then with sterile distilled water and cut into 1 cc. squares. The squares were blotted on sterile filter paper and applied to the surface of the hardened inoculated agar plate for specific periods, and then the plate was incubated at room temperature for seven days. A 1 cm. square of the medicated insole was first placed in contact with the inoculated medium for periods of one, five and fifteen minutes, respectively. The area of inhibition of growth for a one minute exposure was 1.6 cm., for a five minute exposure 3.6 cm. and for a fifteen minute exposure 5 cm. It is interesting to note that, though the 1 cm. square of the insole was fixed on the inoculated agar plate, the area of inhibition of growth extended well beyond this area. This would indicate that the medicated insole throws off a fungistatic substance which diffuses into the medium at some distance from its original fixed site. There was apparently no effect on the medium itself (fig. 1 *a*). On exposure of the inoculated agar to the 1 cm. square of the leather-chemical compound for half an hour, the area of inhibition was increased to 5.6 cm. A full hour exposure increased this area of inhibition to 9 cm., as indicated in figure 1 *b*. In the final test the exposure was increased to six hours, and the inoculated agar plate was then incubated for the usual seven days at room temperature. This procedure resulted in complete inhibition of growth of the fungus (fig. 1 *c*).

As a control, three pieces of an untreated leather insole, each 1 cm. square, were placed clockwise on the inoculated medium for one hour, six hours and seven days, respectively. The medium was incubated at room temperature for seven days. This procedure resulted in a heavy growth of the fungus over the entire agar plate, as demonstrated in figure 2. The piece of untreated leather insole which had been left for a period of seven days is readily discernible and is surrounded by a dense growth of the T. interdigitale.

MYCOLOGIC STUDY OF CLINICAL CASES

In an attempt to determine whether the previously described investigations could have a practical therapeutic application, a fifteen month study of dermatophytosis pedis was instituted at the Brooklyn Hebrew Orphan Asylum. Of a total of 327 inmates in the institution, 125,

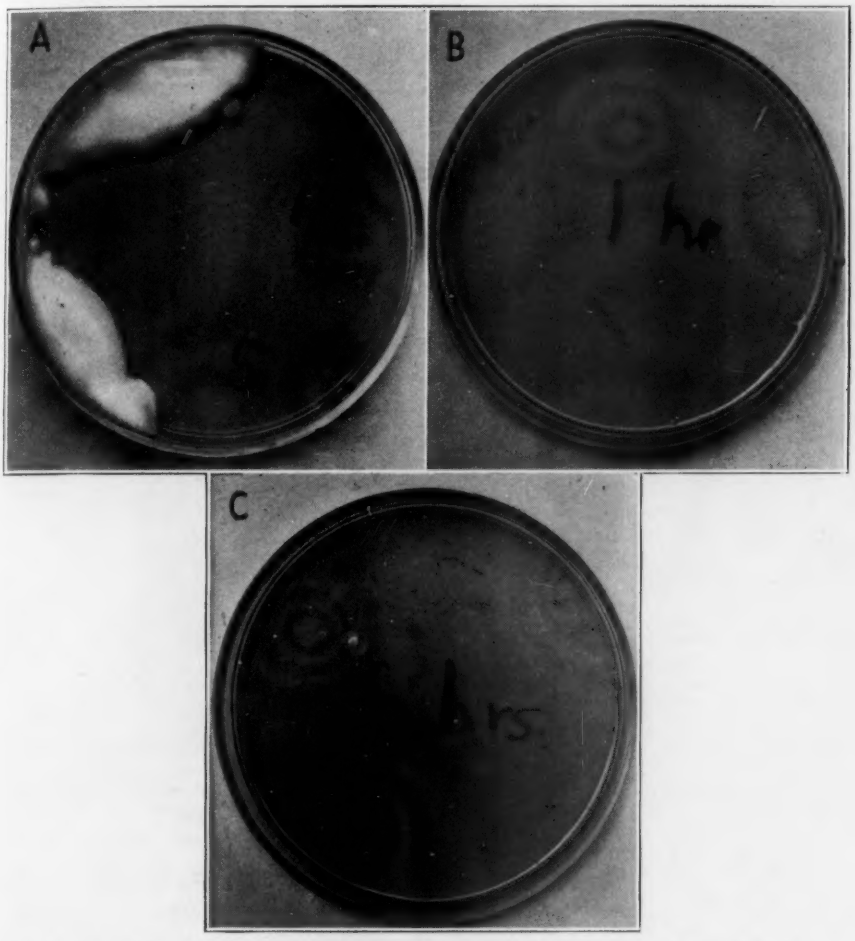

Fig. 1.—Effect of 1 square centimeter of the insole on medium heavily inoculated with T. interdigitale. *A,* numbers denote minutes of exposure. Note the areas of inhibition of growth. *B,* note larger area of inhibition of growth on increasing the exposure to one hour. *C,* after increasing the exposure to six hours, the zone of inhibition is complete and extends to the periphery of the plate. There has been no apparent effect on the medium.

or 38 per cent, were found to have clinical evidence of infection. The incidence was equal for boys and girls, the environment for both groups

being practically alike. Each clinically infected patient was subjected to a mycologic study. The lesions were washed with 70 per cent alcohol, and the outer margins were scraped with a dull, sterile scalpel. The first scrapings were discarded, but the deeper scrapings were placed on sterile glass slides and, after preparation with 20 per cent potassium hydroxide solution, were examined directly under the microscope for mycelia and spores. In addition, the scrapings were cultured on two mediums, one consisting of dextrose 4 per cent, peptone 1 per cent and agar 2 per cent, with a p_H adjusted to 5.8, and the other containing the aforementioned ingredients plus gentian violet in a final

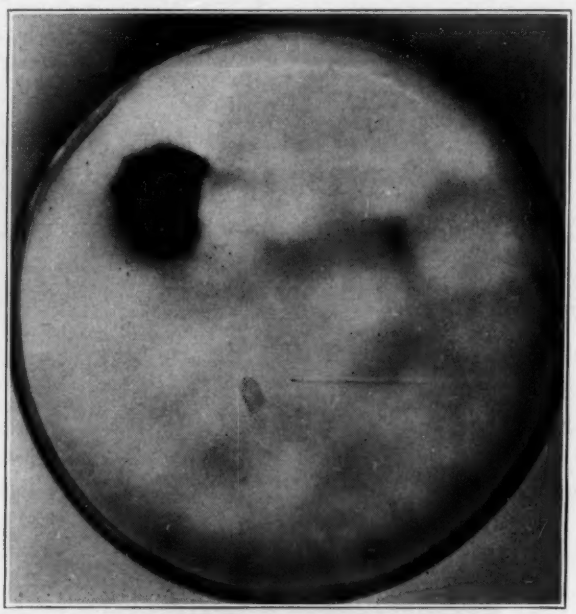

Fig. 2.—Control plate. The square centimeter of untreated leather insole can easily be seen, surrounded by a dense growth of T. interdigitale.

dilution of 1 to 500,000. As the cultures grew, transplants were made on plain Sabouraud mediums to differentiate the fungi. No culture was discarded as negative unless observed for a period of ten to fourteen weeks.

Of the 125 patients, 44, or 35 per cent, yielded mycelia on direct microscopic examination of the scrapings and, in addition, had positive cultures of fungi. In 39 cases the fungi were identified as T. interdigitale, in 2 as T. rubrum, in 2 as T. rosaceum and in 1 as Monilia albicans. The lesions of 20 patients, or 16 per cent, presented mycelia on direct microscopic examination of the scrapings, but the cultures were negative. Sixty-one patients, or 49 per cent, had negative results of both microscopic examination and culture.

TECHNIC

The method of application of the insole was simple. The patient was instructed to insert the treated insole into his shoes and to wear his socks and shoes in the regular manner. Each one continued his daily routine without interference. When the infection was extensive and the lesions extended on the dorsal surface of the foot, the insole was augmented with a rubber moccasin. This moccasin contained the same chemical ingredients as the insole and was worn over a pair of socks only at night. Only a few isolated patients required the use of these moccasins. In the control group of cases an untreated insole was substituted for the leather-chemical compound. In some instances the control period had to be short because of the rapid spread of the infection. The patients were examined at intervals of two weeks, and the clinical progress was noted. Records were kept as to the physical appearance of the lesions, such as scaling, fissuring, vesicle formation, degree of inflammation and denudation, as well as of the subjective symptoms, such as pruritus, perspiration and odor.

RESULTS

Percival [8] and others have stated the belief that a diagnosis of fungous infection should not be made in the presence of clinical evidence of the disease unless the parasite has been demonstrated to exist in the lesion. Clinically I could not differentiate between those cases in which there were positive results of mycologic examination and those cases in which the results were negative. In order to avoid controversy I have grouped my cases in three divisions dependent on the mycologic findings, and I have tabulated the results accordingly.

The first group consisted of the 44 patients who presented positive cultures as well as positive microscopic findings. Twenty-seven of these were given the medicated insole therapy. In 19 the condition cleared clinically; the cultures became negative and mycelia could no longer be demonstrated on microscopic examination of scrapings at the original sites of infection. The period of therapy varied from one month to nine months, the average being four months. Eight patients were discharged during the period of treatment. All 8 showed definite clinical improvement, particularly in reference to subjective symptoms. It is interesting to note that at the time of discharge of these patients, 5 of them had negative cultures, though the mycelia could still be demonstrated on direct microscopic examination of the scrapings. Thirteen additional patients in this group were given a period of preliminary observation, during which time untreated insoles were inserted in their

8. Percival, G. H.: Fungus Infection of the Hands and Feet, Edinburgh M. J. **44**:401-409 (June) 1937.

shoes. This control period varied from one to five months, the average being two and one-fifth months. No medication was employed during this period of preliminary observation, which resulted in either a spread of the infection or no clinical or mycologic improvement for all 13 patients. Then treatment with the medicated insoles was instituted. In 10 of these patients the condition cleared clinically as well as mycologically in from one to eight months, the average being three and one-half months. Three patients were discharged during the course of treatment, and all 3 showed clinical improvement. The 4 remaining patients in this group were discharged from the institution during the period of preliminary observation and before therapy could be instituted. Thus, of 40 treated patients with positive cultures and positive microscopic findings, in 29, or 72.5 per cent, the condition was clinically and mycologically cleared, the average time approximating four months. After the clearing, the patients were observed for a number of months for any recurrence of infection. In 2 patients in this group either a relapse or a reinfection subsequently developed. Comment on these 2 cases will be reserved for later discussion.

The second group consisted of 20 patients who presented mycelia on direct examination of the scrapings of the lesions, the cultures of which were negative. Eleven patients were given the medicated insole therapy. In 8 of these patients the condition cleared clinically and microscopically in from one to three months, the average being two months. Three patients were discharged during treatment, but all 3 showed decided clinical improvement. Eight patients were given a period of preliminary observation as in the first group, varying from one to five months, with an average of three months. During this period either there followed a spread of the infection or no clinical progress was noted. Then medicated insole therapy was instituted. In 7 of the 8 the condition cleared clinically as well as microscopically in one to six months, the average being two and one-half months. One patient of this group was discharged from the institution before therapy could be started. Thus, of 19 patients with negative cultures but positive microscopic findings, in 15, or 80 per cent, the condition was clinically and mycologically cleared in an average period of two and one-third months. A subsequent observation period covering a number of months failed to reveal any evidence of recurrence of infection.

The third division comprised that group of 61 patients with clinical evidence of dermatophytosis in whose cases cultures and microscopic findings were negative. Thirty of this group were given medicated insole therapy, and the lesions cleared in from one month to five months, the average being two months. For control, 31 patients were given untreated insoles and were observed for from one to three months, the average being two months. During this control period the lesions

of 10 of the patients cleared spontaneously, the average time being one and one-half months. The remaining 21 patients serving as controls showed either a spread of the infection or no clinical improvement. Medicated insole therapy was then instituted, and in from one to seven months, with an average of two months, the infection cleared. Thus, of 51 treated patients with what clinically appeared to be dermatophytosis pedis, but without mycologic corroboration, in all 51, or 100 per cent, the condition was cleared in an average of two months. Most of the patients were subsequently followed for a number of months, but none of them showed evidence of recurrence of the infection.

Summary of Results of Treatment of Dermatophytosis Pedis with the Medicated Insoles

	Group 1 Clinically Positive; Cultures Positive; Scrapings Microscopically Positive	Group 2 Clinically Positive; Cultures Negative; Scrapings Microscopically Positive	Group 3 Clinically Positive; Cultures Negative; Scrapings Microscopically Negative
Number of patients given preliminary observation	13	8	30
Average preliminary period, months	3.5	3	2
Number in which condition cleared or improved spontaneously	0	0	10
Number in which condition was unchanged or worse during preliminary observation	13	8	20
Total number of patients treated	40	19	51
Number in which condition clinically and mycologically cleared	29	15	51
Average period for clearing, months	4	2.3	2
Number in which condition was clinically improved but not totally cleared	11	4	0
Number of patients failing to show improvement	0	0	0

The results of this survey are summarized in the accompanying table. The cases are grouped according to the mycologic and clinical findings.

REPORT OF CASES

CASE 1.—M. J., aged 15, had an eruption on both feet for a month, accompanied by scaling, fissuring, denudation of the cutis and erythema (fig. 3*a*). Pruritus, excessive perspiration and odor were present. Direct microscopic examination of the scrapings of the lesions yielded mycelia, and the cultures were positive for Monilia albicans. Medicated insole therapy was then instituted. In two months the subjective symptoms disappeared, and in four months the lesions cleared clinically (fig. 3*b*). Fungi could no longer be demonstrated in the scrapings of the original sites either by direct microscopic examination or by culture. The skin remained clinically and mycologically clear for the following eight months.

CASE 2.—L. L., aged 15, had had an eruption between the toes and on the dorsal surface of both feet for the past six months. The lesions were characterized

by scaling, fissuring formation, denudation of the cutis and erythema (fig. 4 *a*). Direct microscopic examination of the scrapings of the lesion yielded mycelia, and the culture was positive for T. phyton rubrum. Because of the extensive involvement of the dorsal surfaces of both feet, the medicated insole therapy was augmented with rubber moccasins containing the same chemical ingredients as the insoles. In three months the eruption cleared (fig. 4 *b*), and the results of direct microscopic examination of the scrapings at the original sites as well as the cultures became negative.

Fig. 3 (case 1).—*A*, cultures positive for M. albicans. Note the clinical appearance of the lesions before treatment. *B*, after four months of therapy. Cultures and direct microscopic examinations now negative.

Fig. 4 (case 2).—*A*, the lesions before treatment. Cultures positive for T. rubrum. *B*, after three months of therapy. Cultures and direct microscopic examinations now negative.

Case 3.—J. L., aged 17, had an eruption on both feet, consisting of scaling, fissuring, vesicle formation and erythema (fig. 5 *a*). Pruritus, profuse perspiration and a strong odor accompanied the eruption. Mycelia could be demonstrated on direct microscopic examinations of the scrapings of the lesions, but repeated cultures were negative. A control period of four months was instituted, but no improvement was demonstrable at the end of that time. Because of the extensive involvement of the dorsal surfaces of both feet the medicated insole therapy was augmented with medicated rubber moccasins worn at night. In four months the

lesions disappeared (fig. 5 *b*), and mycelia were no longer demonstrable on direct microscopic examination of the scraping of the original sites.

COMMENT

Although this survey was limited to 125 patients, many interesting observations were recorded. It was noted that the younger the patient and the more recent the infection, the more quickly amenable was the infection to treatment. None of the patients wearing the medicated insoles complained of any discomfort during the period of therapy. However, 2 patients did experience a slightly tingling or burning sensation with the wearing of the medicated rubber moccasins.

Fig. 5 (case 3).—*A*, the lesions before treatment. Mycelia demonstrable on direct microscopic examination, but cultures negative. *B*, after four months of therapy. Direct microscopic examination and culture gave negative results.

Two patients had either a relapse or a reinfection. Both patients originally had had positive cultures and, after clearing, negative results of clinical and mycologic examinations for three months. With the relapse or reinfection mycelia could be demonstrated on microscopic examination of the scrapings of the new lesions, but repeated cultures remained negative. In both patients the condition eventually cleared again. During this study only 7 new cases appeared in the institution after the initial survey of all the inmates. In 6 of these cases fungi were shown by microscopic examination of scrapings. This is a surprisingly

low number for approximately a year. This observation suggests the possibility of the general employment of these medicated insoles as a prophylactic measure against dermatophytosis pedis.

SUMMARY

A new and simple method of treatment for dermatophytosis pedis is described.

The fungistatic action of leather insoles containing rubber impregnated with 8-hydroxyquinoline, parachlorometaxylenol and chlorthymol against T. interdigitale is demonstrated.

Of 40 treated patients with positive cultures and mycelia demonstrable on direct microscopic examination, in 29, or 72.5 per cent, the condition was clinically and mycologically cleared in an average period of four months.

Of 19 treated patients with negative cultures but with mycelia demonstrable on direct microscopic examination, in 15, or 80 per cent, the condition was clinically and mycologically cleared in an average period of two and one-third months.

Of 51 treated patients with negative cultures and no microscopic findings, in 51, or 100 per cent, the condition was cleared in an average period of two months.

Dr. Samuel S. Epstein participated in the mycologic investigations.

1245 Union Street.

GENERALIZED HERPES ZOSTER ASSOCIATED WITH LEUKEMIA

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AND
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The occurrence of generalized herpes zoster in association with leukemia was first reported by Fischl in 1914. A review of the literature has disclosed 32 cases of this syndrome. The following tabulation presents the salient features of the individual cases.

Author	Sex	Age	Type of Leukemia
Fischl, F.: Arch. f. Dermat. u. Syph. **118**: 553, 1913-1914	Male	61	Lymphatic
Weber, F. P.: Brit. J. Dermat. **28**: 13, 1916	Male	59	Lymphatic
Proebsting: Deutsche med. Wchnschr. **47**: 116, 1921	?	?	Leukemic lymphadenosis
Lepp, F.: Zentralbl. f. Haut- u. Geschlechtskr. **19**: 870, 1926	Female	59	Lymphatic
Ziel, R.: Med. Klin. **22**: 985, 1926	Male	67	Not specified
Jadassohn, J.: Zentralbl. f. Haut- u. Geschlechtskr. **20**: 23, 1926	Male	68	Lymphatic
Kreibich, E.: Zentralbl. f. Haut- u. Geschlechtskr. **23**: 612, 1927	Male	70	Lymphatic
Zeisler: Arch. Dermat. & Syph. **17**: 140 (Jan.) 1928	?	?	Not specified
Freund, H.: Arch. f. Dermat. u. Syph. **154-155**: 476, 1928	Female	57	Lymphatic
Münsterer, H.: Dermat. Wchnschr. **87**: 121, 1928	Male	45	Lymphatic (aleukemic)
Glaubersohn, S.: Dermat. Wchnschr. **87**: 1422, 1928	Female	52	Lymphatic
Keining, E.: Dermat. Wchnschr. **86**: 665, 1928	Male	58	Lymphatic (?)
Marigondas: Gazz. d. osp. **49**: 549, 1928	Male	72	Myeloid (?)
Halle, H.: Arch. f. Dermat. u. Syph. **159**: 238, 1930	Male	68	Lymphatic
Gottron and Jakobi: Zentralbl. f. Haut- u. Geschlechtskr. **32**: 548, 1930	Male	63	Lymphatic
Dostrowsky, A.: Dermat. Wchnschr. **92**: 685, 1931	Male	55	Lymphatic
Katz, F.: Arch. f. Dermat. u. Syph. **164**: 561, 1931	Female	49	Lymphatic
Arzt, L.: Dermat. Wchnschr. **96**: 725, 1933	Female	63	Lymphatic
Markus, cited by Marques, J. F.: Arch. f. Dermat. u. Syph. **176-177**: 295, 1938	Male	72	Lymphatic
Markus, cited by Marques, J. F.: Arch. f. Dermat. u. Syph. **176-177**: 295, 1938	Male	55	Lymphatic (aleukemic)
Wolfram and Marques, cited by Marques, J. F.: Arch. f. Dermat. u. Syph. **176-177**: 295, 1938	Male	76	Lymphatic
Buschke: Zentralbl. f. Haut- u. Geschlechtskr. **39-40**: 496, 1932	Male	55	Lymphatic
Haack, K.: Dermat. Wchnschr. **95**: 1819, 1932	Female	67	Lymphatic
Proppe, A.: Dermat. Ztschr. **69**: 39, 1934	?	?	Lymphatic
Brandt: Acta dermat.-venereol. **14**: 514, 1934	Male	72	Lymphatic
Brandt: Acta dermat.-venereol. **14**: 514, 1934	Male	50	Lymphatic (aleukemic)
Skerr, J.: Arch. Dermat. & Syph. **34**: 809 (Nov.) 1936	Male	40	Lymphatic
Skeer, J.: Arch. Dermat. & Syph. **34**: 809 (Nov.) 1936	Female	53	Lymphatic
Lynch, F. W.: Arch. Dermat. & Syph. **34**: 775 (Nov.) 1936	Male	48	Lymphatic
Damm, cited by Barney, R. E.: Arch. Dermat. & Syph. **37**: 238 (Feb.) 1938	?	?	Not specified
Marques, J. F.: Arch. f. Dermat. u. Syph. **176-177**: 295, 1938	Male	76	Lymphatic
Bancroft, I. R., and McEachern, K. L.: Personal communication to the author	Female	69	Lymphatic

From the University of Michigan Medical School, service of Dr. Udo J. Wile.

Lymphatic leukemia was by far the most common type of leukemia noted, being present in 27 (93 per cent) of the 29 cases in which the type of leukemia was reported. An aleukemic type of lymphatic leukemia was present in 3 (11 per cent) of the 27 cases. A case of probable myeloid leukemia and a case of leukemic lymphadenosis were observed. The type of leukemia was not specified in 3 cases (9 per cent). The average age of the patients reported was 60. Men were affected in

Fig. 1 (case 1).—Unilateral grouped vesicular eruption on the left upper extremity.

20 cases (71.4 per cent), whereas women were affected in only 8 cases (28.6 per cent).

During the past two years 2 cases of generalized herpes zoster in association with lymphatic leukemia were observed in the department of dermatology and syphilology of the University of Michigan Hospital.

REPORT OF CASES

CASE. 1.—A. J. B., a married man aged 58, was first examined in the Department of Dermatology and Syphilology of the University of Michigan Hospital on Aug. 10, 1938. His chief complaints were "skin eruption and leukemia." He had been

well up to two years prior to admission, at which time he first noticed swelling in the neck, axillas and inguinal regions. The diagnosis of leukemia was made at that time from an examination of the blood. Before admission to this hospital he had received roentgen therapy of high voltage on eight occasions, after which the enlargement of the lymph glands diminished. He first noted the appearance of an eruption on his face four weeks prior to admission. During the ten days immediately preceding admission, lesions associated with severe pain developed on the left hand and forearm and became progressively worse. Seven days after the onset a generalized eruption developed.

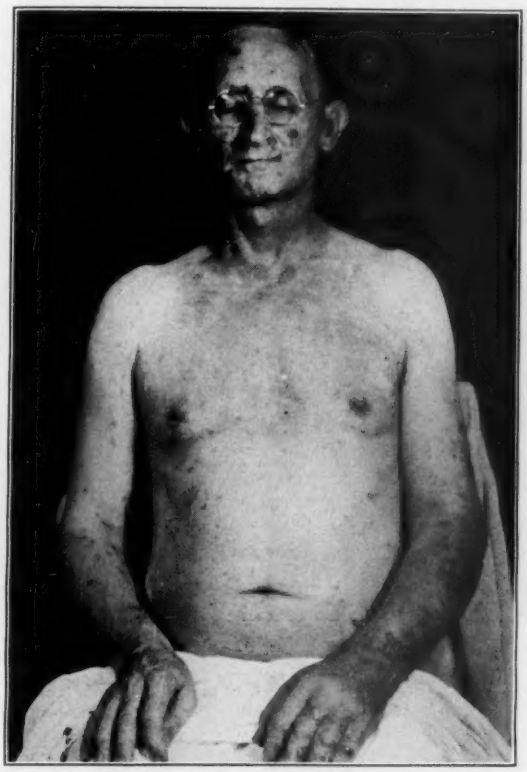

Fig. 2 (case 1).—Generalized vesicular eruption.

The past and family histories had no apparent bearing on the case.

Initial examination revealed a rather well developed white man with marked dyspnea. His temperature was 99.2 F., pulse rate 100 and respiratory rate 24. The skin showed a generalized eruption, involving chiefly the left upper extremity, which also was extremely edematous and could not be moved actively by the patient. There was a strikingly grouped, vesicular and bullous eruption extending from the midportion of the arm, largely on the extensor surface, over the forearm and onto the fingers, which were extremely edematous and tender. The groups of vesicles were superimposed on a deeply erythematous, papular, infiltrated base. Severe secondary infection was present in the vesicular lesions (fig. 1). The face presented small papules and nodules, which were distinctly infiltrated. Some of these nodules

disclosed superimposed vesicles, while others presented excoriated surfaces. The eruptions on the trunk and on right arm were of similar appearance, characterized by small vesicles superimposed on a brightly erythematous base. The lesions on the right side of the body revealed little or no infiltration (fig. 2).

Enlarged lymph glands were found in the inguinal, axillary and cervical regions. The skin overlying these areas showed telangiectasia and pigmentation, apparently due to previous roentgen therapy to these sites. The liver and spleen were palpably enlarged. The heart and lungs were normal.

Initial study of the blood at the Simpson Memorial Institute for Blood Diseases showed 80 per cent hemoglobin (12.4 Gm. per hundred cubic centimeters) by the Sahli method, 4,180,000 red blood cells and 36,800 white blood cells per cubic millimeter. A differential smear showed 15 per cent polymorphonuclear neutrophils, 66 per cent large lymphocytes, 18 per cent small lymphocytes and 1 per cent mono-

Fig. 3 (case 2).—Unilateral grouped vesicular eruption on the scalp.

cytes. The lymphocytes were atypical and immature. A diagnosis of chronic lymphatic leukemia was made. The result of a Kahn test for syphilis was negative. The urine was normal. A biopsy was performed, and histologic examination revealed increased cornification with underlying vesiculation. No lymphoblastomatous infiltrations were noted.

The patient was hospitalized, and the left arm was treated with dressings soaked in hot solution of magnesium sulfate, with much improvement. The left forearm and hand were splinted to prevent wrist drop and contracture of the fingers. One transfusion of 500 cc. of citrated blood was given. The limitation of motion of the left upper extremity was interpreted by members of the department of neurosurgery as being secondary to leukemic infiltration of the cervical roots of the spinal cord.

High voltage roentgen therapy to the cervical spine was productive of definite symptomatic relief as well as of gradual return of function of the left wrist (but not of the fingers). The cutaneous manifestations showed definite but slow improve-

ment during the course of hospitalization. The patient received periodic high voltage roentgen therapy to the lymph glands, spleen and liver, with subsequent decrease in the total white blood cell count to 28,000 per cubic millimeter.

The patient was discharged from the hospital on October 20. He returned to the dermatologic outpatient clinic on November 18, complaining of shooting pains in the left arm. Study of the blood at this time revealed 72 per cent hemoglobin (11.4 Gm. per hundred cubic centimeters), 4,260,000 red blood cells and 24,100 white blood cells per cubic millimeter. A differential smear showed 27 per cent polymorphonuclear neutrophils, 2 per cent eosinophils, 12 per cent small lymphocytes, 6 per cent large lymphocytes and 53 per cent atypical cells, including monocytes and other cells of probable endothelial origin. The patient last visited the hospital on

Fig. 4 (case 2).—Isolated vesicles and blebs on the upper extremities and trunk.

Jan. 4, 1939, at which time bluish, nummular, infiltrated lesions were noted on the face. These were thought to be leukemids, but, unfortunately, biopsy material could not be obtained for microscopic confirmation. Almost normal function had returned to the left elbow and to the wrist joints. Active motion in the finger joints remained impaired.

It was later learned that the patient died of pneumonia in January 1940 outside of the hospital. Permission for autopsy could not be obtained.

CASE 2.—F. G., a white factory worker, aged 52, had been examined at the Henry Ford Hospital, Detroit, prior to admission to the University of Michigan Hospital. At that time the diagnosis of chronic lymphatic leukemia was established by study of the blood and histologic examination of an axillary lymph node. The vesicular lesions present at that examination were thought to be associated with the

leukemic state, but the zosteriform configuration was lacking. Moderate improvement followed high voltage roentgen therapy.

The patient was admitted to the dermatologic service of the University of Michigan Hospital on Sept. 30, 1939, with the chief complaint of "skin trouble." He had been well until fifteen months prior to admission, at which time he first complained of weakness and ease of fatigue. The eruption was first noted at this time and persisted until the time of admission. He had lost 35 pounds (16 kg.).

Examination revealed that he was fairly well nourished, well developed and apparently chronically ill. The skin presented an eruption which consisted of two distinct types of lesions and which was sparsely generalized, involving predominantly the head and the upper extremities. The right frontoparietal region of the scalp presented closely approximated, grouped, thick-walled vesicles, some of which had already become confluent to form blebs, and all of which were superimposed on brightly erythematous bases. This eruption was strikingly delimited by the midline of the scalp. There was a ruptured bleb to the left of the midline on the forehead. The left eye was swollen almost completely shut (fig. 3). The left upper extremity was severely involved by a brawny induration, superimposed on which were numerous groups of thick-walled vesicles and bullae in a roughly linear band, extending downward over the anteromedial aspect of the arm and the upper part of the forearm. There was some limitation of active motion of the left arm. The dorsa of both hands and forearms presented bluish red, coin-sized, firm nodules, with thick-walled blebs superimposed on them (fig. 4). The remainder of the eruption was composed of bluish red, split pea–sized to coin-sized, infiltrated nodules scattered over the trunk and lower extremities.

Soft, tender lymph nodes, varying in size from that of a pigeon's egg to that of a hen's egg, were present in the cervical, axillary and inguinal regions. The spleen was palpable a fingerbreadth below the left costal margin, and the liver was palpable 2 fingerbreadths below the right costal margin. The heart and lungs were normal.

A blood count revealed 95 per cent hemoglobin and 128,000 white blood cells per cubic millimeter. A differential smear showed 92 per cent lymphocytes, 7 per cent polymorphonuclear neutrophils and 1 per cent monocytes. The result of a Kahn test for syphilis was negative.

The family of the patient was not cooperative in respect to further study, having been informed previously of the hopelessness of the patient's condition. Consequently, further data are not available, nor has the patient been heard from since the initial examination.

SUMMARY

Two cases of generalized herpes zoster in association with lymphatic leukemia are reported.

A review of previously reported cases is presented.

Generalized herpes zoster when complicating the leukemic state occurs most frequently in middle-aged men afflicted with lymphatic leukemia.

ACNE VULGARIS

REVIEW OF HISTOLOGIC CHANGES OBSERVED IN EARLY LESIONS

FRANCIS W. LYNCH, M.D.
ST. PAUL

The study of acne is important both because of the frequent occurrence of the disease and because the results of treatment are relatively unsatisfactory. There seems no end to the number and variety of therapeutic agents suggested for use in cases of acne. While many of the suggestions have been well considered and the results of their application well controlled and tested before being reported to the members of the medical profession, their very number and variety suggest that investigative energy might better be devoted to the unsolved fundamental problems of this disease. Among these problems are the relation of acne to the seborrheic state, to infection, to puberty, to the endocrine system and to the metabolism of carbohydrates and fats.

Further work on the association between acne and seborrhea is dependent on more accurate knowledge of the latter condition, particularly the change in the nature and amount of sebum, as well as on confirmation and extension of the more recent studies on the bacteriology of seborrhea.

There can be no denial of a relation between acne and the endocrine system, but there is no satisfactory evidence that the eruption is directly dependent on the demonstrated deficiencies of male or female hormones. After more numerous and more detailed chemical analyses have been made, the experimental approach must be used before conclusions can be drawn.

It is evident that there is some connection between acne and the diet, but this relation is frequently overemphasized. Weighed dietary regulation, chemical studies of the blood and tissues and prolonged clinical observation might clarify such a relation. The association with carbohydrate metabolism is less important, or at least less obvious, than was formerly thought, but interest in lipoid metabolism has been reawakened recently by the therapeutic claims of Sutton.

Since the histologic and bacteriologic investigations of acne were among the first extensive dermatologic studies, it may seem presumptu-

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Read at the Sixty-Third Annual Meeting of the American Dermatological Association, Inc., Colorado Springs, Colo., May 30, 1940.

From the University of Minnesota, Division of Dermatology, Dr. H. E. Michelson, Director, and the Students' Health Service, Dr. Ruth Boynton, Director.

ous to add to the existing descriptions. However, a critical review suggests that many of the subsequent histologic descriptions are based on rather limited original observations and more on acceptance of Unna's excellent treatise on the subject.[1]

In spite of the need for solution of the problems previously mentioned, it may be worth while to review the pathologic changes of acne, because of the relative paucity of records of direct observations and because descriptions of the early lesions of this disease are often brief

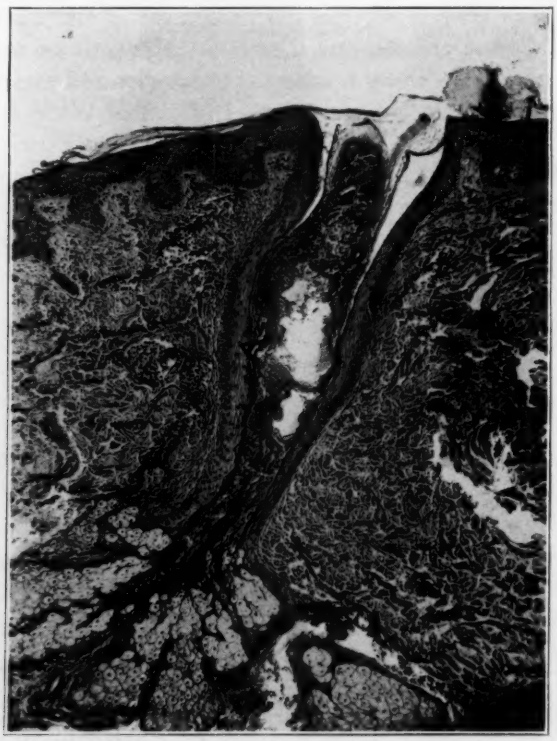

Fig. 1 (×64).—Early lesion of acne, showing a follicular plug made up of hyperkeratotic scale and retained sebum. There is only a moderate degree of perivascular lymphocytic infiltration.

and vague. The inflammatory papules and pustules have been more frequently described, and the observations concerning these lesions fit the modern concepts of cutaneous infection so well that they can probably be accepted.[2] Newer histologic technic might be hoped to allow addition to or reinterpretation of the older descriptions by Unna.

1. Unna, P. G.: The Histopathology of Diseases of the Skin, translated by N. Walker, New York, Macmillan & Company, 1896, pp. 352-361.

2. Whitfield, A.: Seborrhea and Its Consequences, Internat. Clin. **2**:183, 1910.

The sections reviewed in this study were made from early lesions of 30 patients with acne. They were usually removed from the back but in several instances were taken from the face. Several normal follicles were studied for comparison, as were some larger papules and pustules of acne. In addition to the use of hemotoxylin and eosin, sections were stained to show elastic tissue, lipoids and bacteria.

The clinical description of the lesion as a normal follicle, a comedo or a papule was not always supported by the microscopic observations, and it became evident that the age and stage of a comedo cannot be

Fig. 2 (× 25).—Comedo. At the lower border is a remnant of the hair shaft and bulb. The comedo shows the "onion peel" lamellar arrangement characteristic of older lesions.

judged by its gross appearance. There was further confusion because one section of a follicle may show only slight perivascular infiltration while other sections of the same follicle show a mass of infiltrate situated only at one side of the follicle rather than encircling it.

Since it is impossible to determine when a comedo is about to form, this study was begun with examination of follicles from the seborrheic areas of the backs of patients with acne. In a few sections normal anatomic conditions prevailed, but in others there were more than normal perivascular lymphocytic infiltration and some vasodilatation and con-

gestion. In another, the pathologic changes were unexpected, and it is likely that the tissue represented a small papule undergoing involution. There was a mass of infiltrate enclosing what appeared to be atrophic sebaceous gland tissue.

Several follicles thought clinically to contain comedos showed only the same changes observed in the more nearly normal follicles. A large comedo showed no inflammatory reaction in the adjacent tissues. In 1

Fig. 3 (× 150).—Epithelial atrophy at the mouth of the follicle. The Weigert stain also shows an absence of the finer elastic fibrils near the epithelial wall surrounding this comedo.

case there was a parakeratotic plug in the follicle, with perifollicular as well as perivascular infiltrate. At one side of another comedo a small inflammatory infiltrate was observed. In a few instances more advanced changes were noted. In 1 of these there were epithelial atrophy within the follicular mouth and loss of the fine elastic tissue immediately surrounding the follicle. Very little infiltrate was present. In another case giant cells were seen in the infiltrate around a comedo, and there was

evidence of atrophy of the sebaceous glands. One of the larger comedos consisted chiefly of a lamellated, hyperkeratotic scale with some areas of parakeratosis. The remnant of the hair bulb was very small. In the upper layers of the cutis only perivascular lymphocytic infiltrate was present, but deeper, around the base of the follicle, the changes were much more pronounced. There was moderately intensive infiltration with large and small lymphocytes, with occasional plasma cells and a few

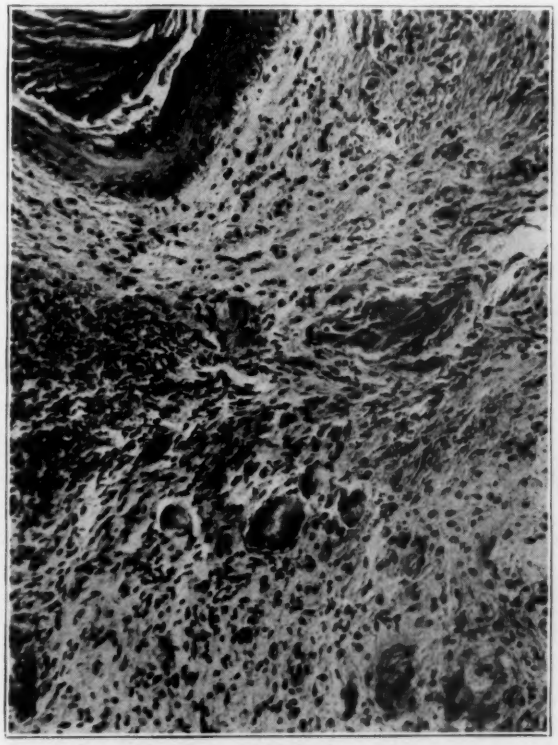

Fig. 4 (× 150).—With persistence of the comedo there is a polymorphous cellular infiltrate having some tendency to organization, and there are a few giant cells.

giant cells. There were many fibroblasts with numerous small fibrils. Elastic tissue was absent throughout the infiltrated areas.

In several lesions which were clinically regarded as small papules only follicular plugging and slight perivascular infiltration were observed. In others there was an inflammatory mass adjacent to a follicle, apparently representing an inflammatory reaction around fragmented epithelial structures. The infiltrate resembled that previously mentioned, but a moderate number of polymorphonuclear leukocytes were present in these

areas, in contrast to sections of earlier lesions. Immediately superior to this small inflammatory mass but in the surface epithelium or perhaps within the follicle was a very small abscess with some polymorphonuclear leukocytes.

In most sections taken at early stages the elastic tissue was undisturbed, though the finer fibrils were absent around older lesions. In areas of inflammatory infiltration elastic tissue could not be demonstrated, though fibroblastic activity was often evident.

Fig. 5 (× 300).—Lymphocytic infiltration and fibroblastic reaction have developed around irregular pieces of tissue, which are stained with sudan III.

Lipoid stains in most of the sections showed no abnormal change except the presence of the sebum in the follicular plug. There was no evidence of extrusion of lipoid into the tissues through the follicular wall. In lesions containing masses of infiltrate the special stain usually showed some fat within the mass, but the usual tissue stains suggested that this fat was present in epithelial cells which were probably part of a former sebaceous gland.

In spite of numerous and extensive studies there remains considerable confusion as to the bacteriology of seborrhea and acne, due partly to the variety of descriptive terms used by the observers and partly to the pleomorphism of several of the organisms concerned. Since Pityrosporum ovale, Corynebacterium acnes and several staphylococci are found frequently on normal as well as on seborrheic skin, it is difficult to determine whether any of them is pathogenic. The belief that the acne bacillus is pathogenic was once vigorously supported by most inves-

Fig. 6 (× 250).—At the left of the follicle, near its mouth, there is a small abscess showing necrosis and polymorphonuclear leukocytes, though the lesion was still clinically regarded as a papule.

tigators, but there is now considerable doubt. There is doubt also whether the cocci are secondary invaders or perhaps saprophytes or (less probably) the etiologic organisms of acne.

I am unprepared to enter into any bacteriologic discussion, and I can only hope that the record of my observations will not further confuse. In the identification of the organisms in the sections of tissue, I was greatly aided by a bacteriologist who carried out cultural studies on these and

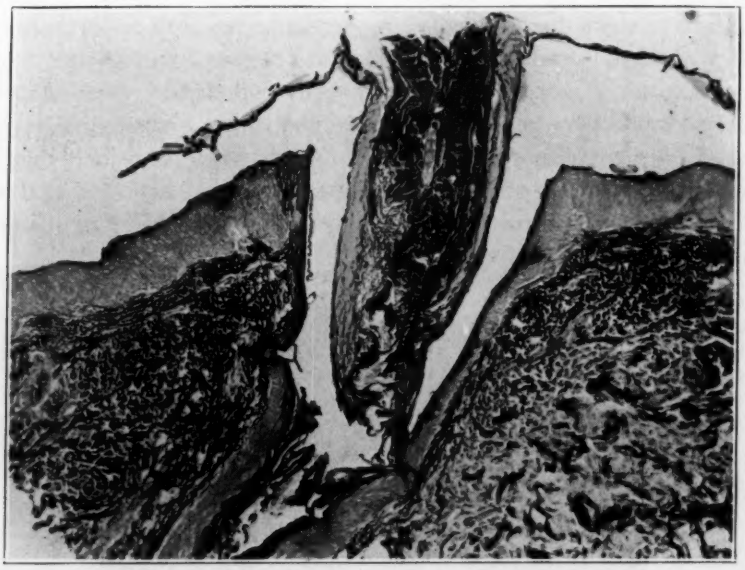

Fig. 7 (× 75).—Within the comedo are darkly stained masses of diphtheroid bacilli, particularly evident near the lanugo.

Fig. 8 (× 1,800).—The pleomorphism of the diphtheroid bacilli is evident in these organisms from the mouth of a follicle containing a comedo. These organisms are much smaller than the so-called bottle bacillus.

other patients.[3] Cultures of material from the skin of normal persons and of persons with acne showed the fairly constant presence of two organisms apparently identical with those observed in the sections of tissue. A gram-positive coccus was identified as a white staphylococcus. The gram-positive bacillus was a microaerophilic organism presenting a variable appearance: large coccoid forms, diphtheroid rods, fine rods, beaded forms, "seed" forms and a "plasma cell" form. The rods were occasionally paired or in short chains. Though decided pleomorphism of the bacilli was noted in a given culture, a single morphologic type usually predominated. The "plasma cell" forms described by Ketron (acne B)

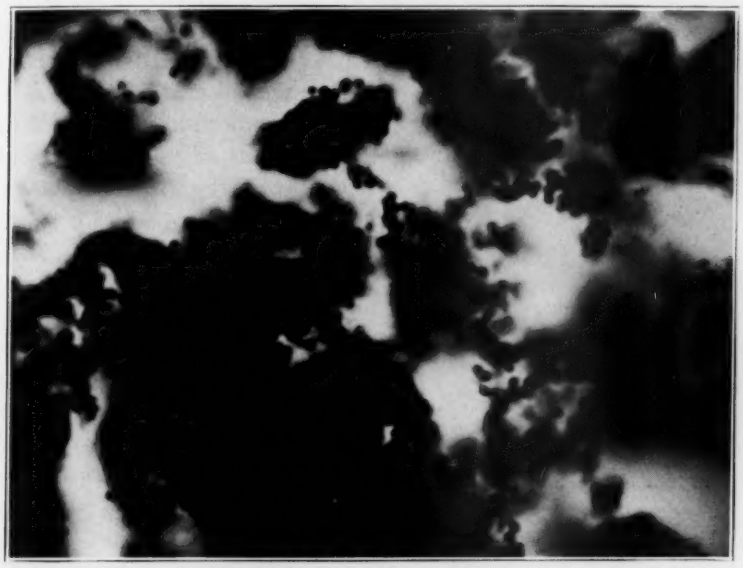

Fig. 9 (× 1,800).—Staphylococci are present in large clumps within a follicle of a papular lesion. With direct observation it is evident that the organisms all have the same size and form.

remained more consistent in their differentiation from the other types than did the other forms. In smears from the lesions phagocytosis was observed only occasionally and was practically limited to diphtheroid organisms.

The same organisms were seen in many of my histologic preparations. Diphtheroid bacilli were observed in nearly all sections of simple follicles and comedos; they were usually most numerous at the follicular orifice and along the lanugo. These organisms were usually seen in

3. Help and advice were given by Dr. A. T. Henrici, professor, and Miss Margaret Nickle, graduate student, of the Department of Bacteriology, University of Minnesota.

large clumps, but the clumps were scattered through the follicular contents without much regularity. The diphtheroid bacilli showed pleomorphism; some were coccoid forms, others were rather fine rods and others, because of the light staining central band and the darker rounded ends, resembled diplococci. In some instances the short rods were paired, and a few were in chains. Staphylococci were seen in none of the normal follicles but were present in several of the comedos and papules, twice in considerable numbers; in these lesions few or no diphtheroid organisms were seen. Pityrosporum ovale was present in many of the sections.

The presence of bacteria was almost entirely limited to the contents of the follicle. In only 1 instance were a few bacilli noted in the epithelial wall of the follicle and in the surrounding connective tissues. In the absence of any inflammatory reaction around these organisms one could not be sure whether they might not have been introduced into the tissues accidentally during cutting of the sections.

SUMMARY

Examination of a series of 30 early lesions of acne affords no clue as to the cause of the comedo. The sebaceous skin of persons with acne presents varying degrees of perivascular infiltration and some follicular plugging with sebum and hyperkeratotic scale. The clinical comedo may present little more than these changes, though characteristically the plug is larger and appears to be more firm and parakeratosis is evident. The inflammatory reaction, aside from slight degrees of perivascular infiltration, appears first around glandular epithelial fragments. Perhaps the persistence of a comedo leads to atrophy and fragmentation of some of the glandular appendages of the follicle. These fragments then become surrounded with an infiltrate of large and small lymphocytes, some plasma cells and even giant cells. Polymorphonuclear leukocytes do not appear until later. The connective tissue cells proliferate, and this eventually results in a basket of fibers around the base of the follicle.

Special stains of sections from early lesions show the bacteria confined to the follicular contents and not invading the wall of the follicle, its glandular appendages or the adjacent tissues. If it could be assumed that bacteria pass from the comedo through the follicular wall into the connective tissues, the inflammatory reaction which develops in the tissues could be easily understood. Although this possibility exists, it was not possible to demonstrate bacteria in the early inflammatory infiltrate, and one must search elsewhere for the immediate cause of this inflammation. Bacterial toxins may be suspected, and there is the possibility that there may have been a few bacteria in the tubule or gland around which the reaction developed, but such organisms were not seen.

Whereas a comedo containing no demonstrable bacteria may be associated with at least a slight degree of inflammatory reaction, it is possible to find larger comedos with a great number of organisms but no surrounding inflammation. Such observations leave doubt as to the significance of the bacteria. There remains the possibility that the organisms are saprophytes or secondary invaders. A possible synergistic action is unlikely, because in cultures and in histologic studies intermingling of bacilli and cocci in large numbers is seldom observed in a single lesion. Since only the early lesions of acne are under consideration, the question of secondary bacterial invasion is not of immediate concern.

Although this study gives little evidence of a bacterial causation of acne, additional information should be obtained by continued bacteriologic, serologic and immunologic experimentation. Chemical studies may also be of aid in determining whether the inflammatory nature of the acne lesion can result from bacterial production of butyric acid in the follicle.

The nature of the cellular reaction of the acne papule has suggested to some observers that it develops around lipoids extruded from the follicle. In this series of sections there was no evidence of follicular rupture or of free fat in the tissues. Observations on these tissues suggested that the inflammatory reaction developed around atrophic glandular structures (having a lipoid content demonstrable with special stains) rather than around free globules of fat. The fats within the inflammatory mass appeared to be present in sebaceous gland cells rather than in histiocytes. These studies do not allow any conclusions as to a possible relation between acne and the general metabolism of lipoids.

Thus it is my conclusion that the inflammatory phase of the acne papule can arise without apparent rupture of the follicle and without demonstrable bacterial invasion of the follicle wall, the glands or the connective tissues. The papule frequently develops as an inflammatory reaction around remnants of atrophic sebaceous glands which are perhaps a sequel to the stasis and pressure caused by the comedo within the follicle. The nature of the mechanism of production of the comedo remains obscure, as does the part played by the bacteria throughout the development of the lesion.

ABSTRACT OF DISCUSSION

DR. MARION B. SULZBERGER, New York: Dr. Lynch has done a fine, objective piece of work. This presentation is a distinct contribution. One can never tell how much one may be able to build in the future on the established foundation of factual, objective observations of this kind. The subject of the pathogenesis of acne vulgaris is one of the most important with which dermatologists have to deal.

I should like to ask Dr. Lynch whether he had the opportunity to examine bacteriologically lesions from various parts of the body. I think that what he has said has forged another link in the chain of proof that micro-organisms, or

at least micro-organisms which are known and demonstrable at present, are probably not of etiologic significance in the production of acne vulgaris. I wonder whether Dr. Lynch was able to substantiate a claim that the facial lesions of acne vulgaris abound with bacteria, bottle bacilli, pityrospora, staphylococci, both white and yellow, and other micro-organisms, but that when one examines apparently identical lesions on the covered parts of the back and chest one will often find them sterile or almost sterile. This would be additional evidence that the micro-organisms demonstrated in the facial lesions are probably not of basic etiologic significance in acne vulgaris.

To return to the second observation, I think, if I interpreted Dr. Lynch correctly, that his idea of the pathogenesis of acne is not very dissimilar from that which has been held previously and which was discussed at length in a study by Drs. Rostenberg and Sher and me several years ago. We stated that the primary lesion is the plugging of the follicle, which leads to the comedo, and that only secondarily, for some reason not definitely known, does inflammation develop around some of the plugged follicles.

There are several possible explanations.

One is that the follicle acts as a foreign body and that the inflammation is a foreign body reaction to the follicle itself. That, apparently, is not the case, according to Dr. Lynch's observations.

The second possibility is that material from the plugged follicle transfuses or passes through the epithelium and into the cutis around the follicle; that lipoids or substances derived from micro-organisms or other material thus infiltrate the cutis, and that the inflammatory reaction is a response to this infiltrating foreign material. Apparently, according to Dr. Lynch's studies, this hypothesis also does not apply. It would not explain the localization of the infiltrate which he has demonstrated.

The third possibility is that the atrophy and disintegration of the follicle wall, which are due to pressure of the plug, lead to manufacture of products which act as foreign bodies (lipoids and perhaps other products) and that the inflammation is a reaction to that disintegrating material of the wall itself and not to material coming from within the follicular orifice. The localization of the earliest visible infiltration, as demonstrated by Dr. Lynch, does not confirm this third possibility either.

It seems to me that there is a fourth possibility, namely, that plugging and atrophy of the follicle may prevent normal excretion of material, damming up material which normally passes into the follicular orifice from the cutis; that this material, impeded in its normal route and speed of excretion, may be gathered around the follicle, and that the reaction of the inflammation may be the reaction to the dammed-up fatty and other material which failed to find exit through the follicle. This hypothesis would explain many otherwise inexplicable observations in cases of acne vulgaris—for example, the exacerbations due to drugs, to certain foods and to glandular substances—and would also, in my opinion, account for the site of inflammation as found by Dr. Lynch.

I should like to ask Dr. Lynch's opinion of this fourth hypothesis.

Dr. Fred D. Weidman, Philadelphia: One feature of Dr. Lynch's presentation that interested me was the point he raised at the beginning, that it is difficult to distinguish between invagination of the surface and true hair follicles. A similar experience was encountered in a series of cases of trichoepithelioma which will be reported by Dr. H. J. Goldman. Dr. Goldman and I could find many condensations of keratinous material within the invaginations, but it was rare to

identify any hair shafts within them. The point of our studies was that, as the trichoepitheliomatous hyperplasias were taking place in connection with those invaginations, it was essential that we should make certain that the structures concerned were hair follicles before we could really call the hyperplastic structures trichoepitheliomas.

I have been wondering since then whether, on the face at least, there may be some invaginations occurring as part of an embryologic abnormality, the follicles never going on to full development and never leading to development of a hair shaft but remaining simply as invaginations. It may be that there are some of these which do not appear in the form of adenomatous trichoepitheliomas on the face but remain as hamartomatous structures and that they are the basis of these questionable hair follicles with which Dr. Lynch has been struggling.

Another feature in the presentation that interests me is the matter of the giant cell. I realize that Dr. Lynch was dealing only with the earlier phases of the pathogenesis of the acne lesion, but I must say that in some of the older lesions which I have studied there was no question about the stimulus to production of the giant cell. Of course, in cases in which the hair follicle had become destroyed its sheath was ruptured (there was suppuration) and within some of the giant cells it was possible to discover hair shafts. In other words, with rupture of the wall of the follicle the contents had attained an interstitial position round about and in the general mopping-up process foreign body giant cells were concerned.

Finally, I am always interested in the possibility that choline may provoke the inflammatory reaction. It has been known for many years that bacteria acting on lecithin will produce choline. Choline is a violent poison of an order of violence comparable to that of histamine. Every one is aware of the complexity of the lipoid contents of acne lesions, whether early or late, and since lecithin is included among the lipoids, there is no reason why choline should not be present. I have several times remarked that probably every dermatologist is aware of the fact that when he squeezes out acne pustules the erythematous reaction round about seems to be out of all proportion to the trauma that has been inflicted. I wonder whether choline that has been liberated has diffused into the tissues.

Perhaps there is an easy way of testing that clinically. Thus, it is well known that atropine is the physiologic antidote for choline; accordingly, there is a means at hand of inquiring, at least in a superficial way, into the possible role of choline in provoking the earlier inflammatory phenomena of acne vulgaris.

Dr. Hamilton Montgomery, Rochester, Minn.: I have not had the opportunity of studying the pathologic changes of early lesions of acne but have studied the histologic structure of severe types of acne, pyoderma faciale, etc. In the severe types of pyoderma one does not, as a rule, see a foreign body giant cell reaction unless there has been complete rupture or partial disintegration of the hair follicle. The concept expressed in some textbooks that there is a foreign body giant cell or even a tuberculoid type of reaction in cases of acne I think is a false one, and I am glad that Dr. Lynch has emphasized this.

In regard to the presence of micro-organisms, I have always felt there is a close association, in many cases, of acne with seborrhea of the scalp. The latter includes so-called seborrheic dermatitis. This is often associated with Staphylococcus aureus and with streptococci of different types, which I believe can be regarded as true pathogens and which probably are of some etiologic significance in these conditions, whether playing a primary or a secondary role.

Dr. Francis W. Lynch, St. Paul: As several of the discussers pointed out, the later lesions of acne have quite a different appearance from the early lesions.

It is unfortunate that I have not yet been able to show how the early lesion leads to the later one and where or when the bacteria takes on significance. These studies do not allow me to make a positive suggestion as to the precipitating cause of the comedo, though some of the older theories receive no support from my studies.

As Dr. Montgomery indicated, the organisms observed in the sections have been found repeatedly on normal skin. Dr. Sulzberger's remarks on the reported absence of organisms from lesions on the back lead to several interesting lines of thought. Almost all of the bacteriologic studies in my cases were made of material from the face, but the sections of tissues were taken from the back in most instances, and organisms were found as in the facial lesions.

In connection with Dr. Weidman's mention of the frequent absence of the hair shaft, I am not sure of its significance. There must be many follicles which do not arrive at complete anatomic or, probably, physiologic development.

In addition to the chemical studies on choline which have been suggested, it might be profitable to work on the relation of butyric acid to the development of the acne lesion. Many of the staphylococci of acne form butyric acid in cultures, and it is possible that butyric acid is formed in the follicle, where it acts as an irritant.

I hope that my report has at least demonstrated that further histologic study of acne may not be fruitless.

LICHEN PLANUS OF THE NAIL BED

REPORT OF A CASE

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AND
J. F. RICCHIUTI, M.D.
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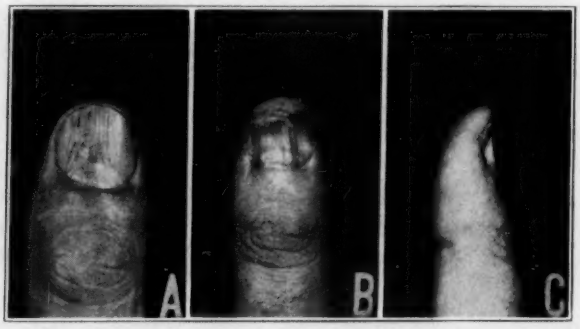
Pathologic changes in the nails of patients suffering from lichen planus have been reported by many observers. Most of the observations would seem not to be peculiar to lichen planus but to be indistinguishable from dystrophies of the nails secondary to some other diseases of the skin. Such abnormal changes in the nails as longitudinal and transverse striations, roughness, subungual hyperkeratosis, thickening, thinning, pitting, brittleness or fragility, yellow or yellowish gray color, opacity and shedding have been described as due to lichen planus. Koilonychia has been reported following lichen planus. Heller [1] stated the belief that thickening, increased fragility, yellowishness and opaqueness are characteristic nail changes in lichen planus. Jadassohn [2] did not consider that changes of such character are pathognomonic of lichen planus. It is our opinion that such lesions when due to lichen planus are probably of indirect causation. In many instances the changes in the nails of patients with lichen planus may be purely coincidental. As against the considerable number of such instances of dystrophic changes in nails in patients with lichen planus, we have found only 7 recorded instances of lichen planus of the nail bed.

Although Heller [3] credited de Lewin [4] with reporting an instance of lichen planus of the nail bed, our study of the original report does not substantiate that opinion. We believe that the first authentic case is that described by Dubreuilh,[5] whose patient had extensive lichen planus, with many punctate umbilicated papules at the bases of all the finger nails.

From the New York Hospital and the Department of Medicine (Dermatology), Cornell University Medical College.

1. Heller, J.: Die Krankheiten der Nägel, Berlin, A. Hirschwald, 1900, p. 144.
2. Jadassohn, J., cited by Heller.[1]
3. Heller, J.: Die Krankheiten der Nägel, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1927, vol. 13, p. 222.
4. de Lewin, G.: Ueber Keratosis universalis multiformis (Pityriasis pilaris rubra Besnier, Lichen ruber acuminatus Kaposi), Berl. klin. Wchnschr. **32**:801 and 829, 1895.
5. Dubreuilh, W.: Lichen plan des ongles, Ann. de dermat. et syph. **2**:606, 1901.

In the patient studied by Du Castel and Druelle [6] there were subungual papules visible through the transparent nail, as well as dystrophic changes, as evidenced by linear grooves and elevations. A similar instance of the disease affecting the nail bed was observed by Gaucher and Druelle.[7] Gottheil [8] described the first case in the United States. In his patient all the finger nails and several toe nails were affected. The first lesion was a small flat black mark at the proximal portion of the lunula. This slowly moved distally. It increased in size from that of a pinpoint to that of a pinhead. There were also pressure atrophy, splitting of the nail and punctate depressions. In Vero's case,[9] papules were visible through the transparent nails of the index and middle fingers of both hands. Godrat [10] described a patient in whom all the finger nails showed elevations associated with pain and tenderness. There was associated softening of the nail, together with other changes. Sayer [11] observed a patient with an extensive proved eruption of lichen planus; tiny



Lichen planus of the nail bed. *A*, typical violaceous papule. *B* and *C*, disappearance of the lesion following roentgen therapy; thinning of the nail plate with the formation of striae may be noted.

violaceous lesions could be seen through the nail plate arranged in parallel longitudinal lines. We question whether involvement of the nail bed is

6. Du Castel and Druelle: Altérations des ongles chez un malade atteint de lichen plan, Bull. Soc. franç. de dermat. et syph. **14**:246, 1903.

7. Gaucher and Druelle: Lichen plan avec lesions des ongles et localisation sur la conjonction palpébrale, Bull. Soc. franç. de dermat. et syph. **115**:33, 1904.

8. Gottheil, W. S.: Lichen Planus Unguium, J. Cutan. Dis. **27**:317, 1909.

9. Vero, F.: Lichen Planus of the Nails: Report of a Case, Arch. Dermat. & Syph. **26**:677 (Oct.) 1932.

10. Godrat, M. J.: Lichen plan des ongles, Bull. Soc. franç. de dermat. et syph. **41**:777, 1934.

11. Sayer, A.: Generalized Lichen Planus with Lesions of the Palms and Nails, Arch. Dermat. & Syph. **41**:813 (April) 1940.

as rare as the few cases reported would indicate. However, Little [12] stated the belief that the nails are seldom involved.

REPORT OF CASE

J. F. R., a physician aged 33, noticed during the summer of 1938 a dime-sized elevated, reddish brown plaque, which was not pruritic, over the right tibia. This remained as a solitary lesion. In April 1939 he noticed on the legs several flat-topped, violaceous, moderately itchy papules. A little later similar lesions appeared on the flexor surfaces of the forearms. There were no lesions on the mucous membrane of the mouth, but a small lesion was noted on the glans penis. The Wassermann reaction was negative; a hemogram was normal, and the urine showed no pathologic changes. The diagnosis of lichen planus was indisputable. He was given pills containing ⅛ grain (8 mg.) protiodide of mercury and took these three times daily. Treatment was suspended after a week because of moderate diarrhea thought to be due to the medication. During the summer of 1939 most of the lesions disappeared spontaneously. In August a violaceous papule appeared on the nail bed of the left thumb within the lunula. The papule was irregularly rectangular in shape and four months after its appearance occupied a third of the nail. As the lesion grew, the nail plate over it became thinned. Pain was experienced on moderate pressure. The nail plate distal to the lesion showed longitudinal striae. The patient was presented before the Manhattan Dermatologic Society [13] in November, and most of the members agreed that the lesion of the nail bed was a typical papule of lichen planus. Treatment was started in November by the administration of unfiltered roentgen rays. Three unfiltered exposures of 150 r each were given at intervals of two weeks. A fourth treatment consisted of 75 r filtered with 1 mm. of aluminum. The lesion at first became flatter but continued to increase in diameter. After the third treatment definite regression was apparent, and by February 1940 the lesion had disappeared. The entire nail plate showed longitudinal striae and was of less than normal thickness. No pain was noted on pressure.

SUMMARY AND CONCLUSION

An instance of lichen planus involving the nail bed is reported, the eighth on record.

The lesion responded to roentgen therapy.

Dystrophic changes of the nails in patients with lichen planus are not pathognomonic of that disease.

121 East Sixtieth Street.

228 West Mahanoy Avenue.

12. Little, E. G.: Lichen Planus, J. Cutan. Dis. **37**:639, 1919.

13. Lewis, G. M.: Lichen Planus of the Nail Bed, Arch. Dermat. & Syph. **41**:947 (May) 1940.

XC.—MICROSPOROSIS OF THE SCALP CAUSED BY MICROSPORUM FULVUM

REPORT OF A CASE AND DESCRIPTION OF THE FUNGUS

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The infrequency of microporosis due to Microsporum fulvum in the United States, and particularly in the midwest, warrants the report of the following case.

REPORT OF CASE

N. R., a boy aged 4 years, entered the dermatologic clinic of the Barnard Free Skin and Cancer Hospital on Dec. 19, 1939, with a "sore on the scalp," which, the child's mother stated, had been present for a week and showed a gradual increase in size.

Examination showed a circular patch of dermatitis with some alopecia and short, broken-off hairs (fig. 1). The involved area was mildly hyperemic, slightly raised above the surface of the surrounding skin and approximately 3.5 cm. in diameter. The lesion consisted of discrete and confluent papules, which were covered with grayish scales.

Scrapings from the lesion and some of the short, broken-off hairs were examined microscopically. They showed filaments and chains of spores, particularly the freshly infected hairs and scrapings from the periphery of the lesion (fig. 2). Hairs from the central area of the lesion showed a sheath of spores which was analogous to that produced by the microsporum. Cultures on Sabouraud's maltose and dextrose agars confirmed the presence of a microsporum, M. fulvum.

The source of infection could not be determined in this case, since there were no pet animals in the house, although there were many in the neighborhood. Two other children in the family, one younger and one older, were free from the infection.

The patient was given an ointment of salicylic acid (5 per cent) and precipitated sulfur (10 per cent) in petrolatum to apply three times daily. He failed to return to the clinic. An investigation four months later revealed that because of financial reasons the boy, on December 30, had been taken to the St. Louis City Hospital, which was in the vicinity of his home. At that institution he was given a similar ointment. On Jan. 2, 1940 the lesion was described as an "inflammatory

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Studies, observations and reports from the Departments of Dermatology and Mycology of the Barnard Free Skin and Cancer Hospital, service of Dr. M. F. Engman Sr.

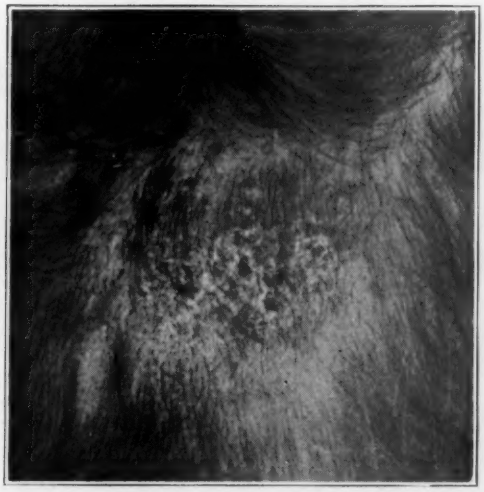

Fig. 1.—Lesion of microsporosis of the scalp caused by M. fulvum.

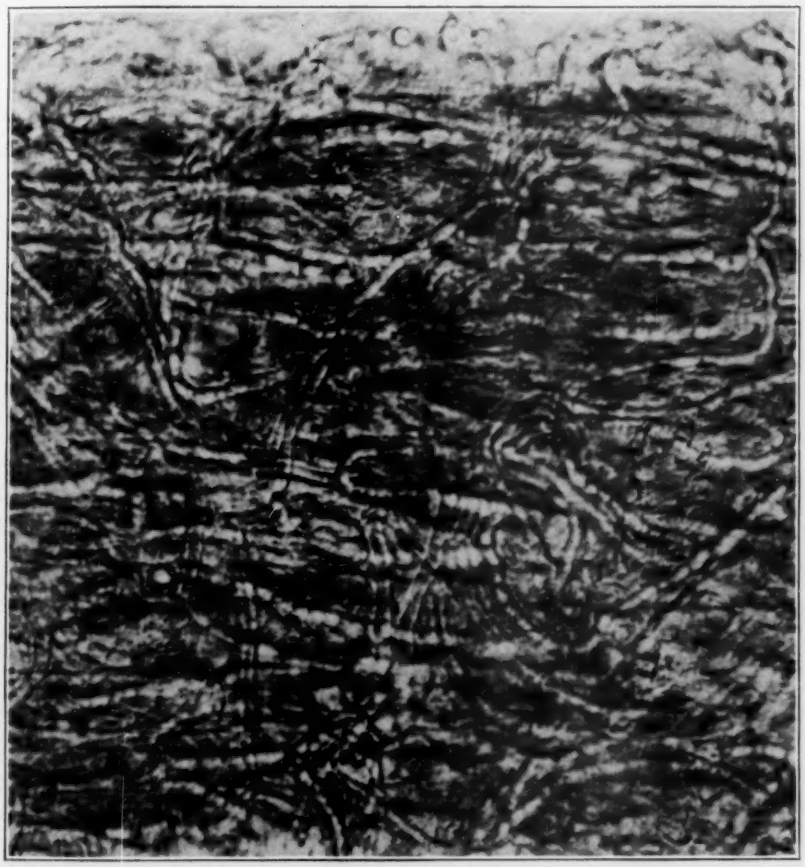

Fig. 2.—Hair infected with M. fulvum. Note filaments and chains of spores.

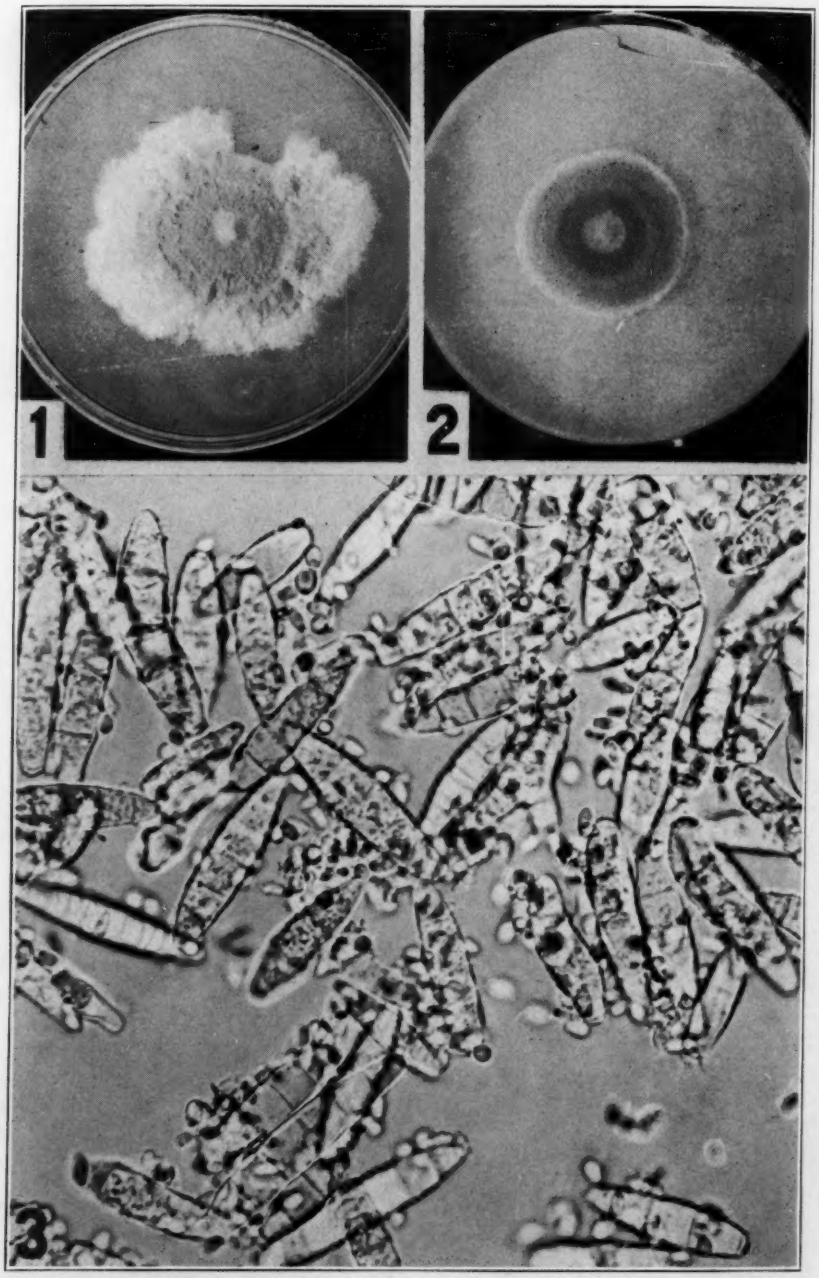

Fig. 3.—*1*, sixteen day old growth of M. fulvum on Sabouraud's glucose agar. *2*, sixteen day old growth of M. fulvum on Sabouraud's maltose agar. *3*, fuseaux and microconidia or aleurospores of M. fulvum grown on Sabouraud's maltose agar (× 560).

dermatitis of the scalp," and wet packs of mercury bichloride (1:5,000) and the subsequent application of ammoniated mercury ointment (5 per cent) were prescribed. The mother was advised to epilate all remaining broken-off hairs. The wet packs were discontinued on January 4. The patient was last seen on January 13, at which time the dermatitis was rapidly clearing. By April 4, the lesion had completely disappeared, and the area was covered with apparently healthy hair.

Microsporosis due to M. fulvum was first described by Uriburu [1] in 1909 in Argentina, where it was reported as being fairly common. The organism has also been described in reports from Uruguay, Brazil, Germany, Hungary and Canada and in a few from New York. Clinically, microsporosis due to M. fulvum may resemble closely an early patch of favus. Microscopically the fungus on the infected hair may simulate microsporums of animal origin or at times Achorion schoenleini. Although no direct evidence is available, M. fulvum is generally considered to be transmitted by dogs or cats.

In culture M. fulvum grows rapidly, producing a characteristic growth in sixteen days. A white central umbo is formed, surrounded by a powdery, ochraceous buff, pinkish buff to light cinnamon-colored velvet, which in turn may be surrounded by an irregular, white, cottony growth, as on Sabouraud's dextrose agar (fig. 3, *1*). On Sabouraud's maltose agar after sixteen days a growth of concentric rings is formed (fig. 3, *2*). The cultural growth may become rapidly pleomorphic, as evidenced by the formation of white, cottony tufts.

Microscopically the cultural growth shows a large number of multiseptate fuseaux (macroconidia or closterospores), which are usually four to six celled, measuring approximately 30 to 55 by 10 to 15 microns, ellipsoid and thin walled, with warty excrescences on the surface. The fuseaux may be found in groups of twelve to fifteen on branched conidiophores (fig. 3, *3*). Microconidia or aleurospores are also evident. These measure approximately 2 to 4 by 3 to 5 microns and are spherical or ovoid, sessile or on short sterigmata. On Sabouraud's sugar mediums there also may be seen chlamydospores, arthrospores, nodular bodies, pectinate hyphae and spirals.

This organism at times may be confused with the common microsporums of animal origin, particularly Microsporum canis and Microsporum felineum, and should be differentiated in order to demonstrate that this organism is not as rare as is supposed.

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1. Uriburu, J. V.: Contribución al estudio de las tinas en Buenos Aires, Argent. méd., 1909, no. 42, p. 241; no. 43, p. 258; no. 44, p. 260; cited by Dodge, C. W.: Medical Mycology, St. Louis, C. V. Mosby Company, 1935, p. 541, and Sabouraud, R.: Les teignes, Paris, Masson & Cie, 1910.

EXTENSIVE LICHENIFIED ERUPTION CAUSED BY TRICHOPHYTON RUBRUM

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BOSTON
AND
NORMAN F. CONANT, PH.D.
DURHAM, N. C.

The purpose of this paper is to report 4 cases, 2 in detail, of extensive lichenified dermatitis caused by Trichophyton rubrum (Castellani 1910; Sabouraud 1911), an organism rarely found in this part of the country. While Ota [1] has shown this organism to be frequently the cause of "eczema marginatum" in Japan and Manchuria, Weidman [2] in a discussion of the geographic distribution of T. (purpureum) rubrum showed not only that it was frequently found in Japan and Manchuria but that it was also common in the southern part of the United States. Hodges [3] also reported finding this fungus in cases of eczema marginatum, onychomycosis and dermatitis interdigitalis in the south. From New York, Lewis, Montgomery and Hopper [4] have recently reported on it in dermatoses simulating arsenical keratosis, neurodermatitis, eczema, sycosis vulgaris and erythema annulare centrifugum. The organism reported by the latter authors appears to be similar to the one found in the cases to be reported here.

Read at the Third International Congress for Microbiology, New York, Sept. 8, 1939.

From the Department of Dermatology, Massachusetts General Hospital, Boston, and from the Department of Bacteriology, Duke University School of Medicine, and Duke Hospital, Durham, N. C. The work at Duke Hospital was aided by a grant from the John and Mary R. Markle Foundation.

1. Ota, M.: Contribution to the Study of Trichophyton Purpureum Bang, Trichophyton Interdigitale Priestly and Trichophyton B Hodges, also on Trichophyton "A" and Trichophyton "B" of Author, Arch. Dermat. & Syph. **5**:693-713 (June) 1922.

2. Weidman, F. D.: Laboratory Aspects of Epidermophytosis, Arch. Dermat. & Syph. **15**:415-450 (April) 1927.

3. Hodges, R. S.: Ringworm of the Nails, Arch. Dermat. & Syph. **4**:1-26 (July) 1921.

4. Lewis, G. M.; Montgomery, R. M., and Hopper, M. E.: Cutaneous Manifestations of Trichophyton Purpureum (Bang), Arch. Dermat. & Syph. **37**:823-839 (May) 1938.

REPORT OF CASES

CASE 1.—Mrs. E. O., aged 37, white, reported to the Massachusetts General Hospital in March 1935, complaining of an extensive eruption involving the upper and lower extremities of six years' duration. The lesions first appeared on the right foot and then extended upward to the knee. Involvement of the right arm was noticed four years later. Itching was severe.

Fig. 1.—Extensive eruption on the shoulder, with sharply demarcated border. Lesion consists chiefly of lichenified papules.

Examination of the skin showed an extensive eruption involving the right upper extremity from shoulder to finger nails (fig. 1). Both the extensor and the flexor aspects were involved. A similar extensive eruption was noticed also on the right lower extremity, extending from the knee downward and including the toe nails, which were discolored yellowish brown and deformed. The eruption consisted chiefly of lichenified papules, some covered with scales, with a sharply demarcated border. The center areas showed tendency to clearing. The lower part of the trunk, the chest and the suprapubic regions showed pinhead-sized lichenified papules with a tendency toward follicular distribution. Some of the

areas which had cleared showed depigmentation, surrounded by a zone of hyperpigmentation. These simulated areas of tinea versicolor after exposure to the sun.

This eruption was resistant to all forms of local treatment except the following ointment:

Chrysarobin	2 per cent
Salicylic acid	6 per cent
Precipitated sulfur	6 per cent
Petrolatum	1 ounce (31 Gm.)

This ointment, however, was helpful only up to a certain point, and then improvement of the condition remained at a standstill. Inhalations of ethyl iodide proved the most effective form of therapy in this case.

CASE 2.—Mrs. N. V., aged 28, white, entered the Massachusetts General Hospital on Nov. 11, 1938, with a complaint of extensive itching. She was well up to one and one-half years ago except for ichthyosis, which required only the application of some cream during the winter. About the time of onset the patient noticed a few "blister-like" spots which appeared on the proximal dorsal aspects of the toes with a spread down to the webs. This was accompanied by pruritus. The interdigital spaces were fissured. About two to three months after this she noticed small "blister-like" lesions on the thighs and chest. Soon more appeared on the thighs, chest and back (fig. 2).

The examination of the skin showed many circular and gyrate lesions, some small and some rather large, scattered over the legs, trunk and arms. The borders were slightly raised and composed of fine lichenified, scaly papules. The centers were clear. Intermingled with these lesions were lichenified plaques varying in size. The skin also showed typical ichthyosis. No evidence of any vesicles was noted.

The eruption was resistant to all forms of local treatment but responded to inhalations of ethyl iodide.

Previous reports[5] have been interpreted as advocating inhalations of ethyl iodide for all types of fungous infections. Although several types of fungous infection have been treated by this method, it should be noted that the cases were selected "because of extensive involvement, long duration of the disease or lack of response to other forms of treatment." In systemic infections, dermatophytosis of the groins or intergluteal fold and extensive invasion of the skin, as in the cases being presented, the use of inhalations of ethyl iodide has proved to be the most effective method of treatment.

STUDY OF THE ETIOLOGIC AGENT

In case 1 material for study was taken, by means of a curet, from several places in the involved areas. Scrapings were taken from the

5. Swartz, J. H.; Blumgart, H. L., and Altschule, M. D.: Ethyl Iodide Inhalations in the Treatment of Mycotic Infections of the Skin and Allied Conditions, Arch. Dermat. & Syph. **21**:182-185 (Feb.) 1930. Swartz, J. H., and Reilly, M.: Inhalations of Ethyl Iodide in Fungous Infections, ibid. **32**:551-555 (Oct.) 1935.

infected toe nails, from the interdigital spaces on the foot and from the border of the lesion on the calf. Likewise, scrapings were taken from the lesion involving the arm, from the border of the lesion at the shoulder and at four intervals along the arm to the fingers. These bits of skin and scrapings were examined microscopically after being treated with 15 per cent potassium hydroxide, and each showed a network of branch-

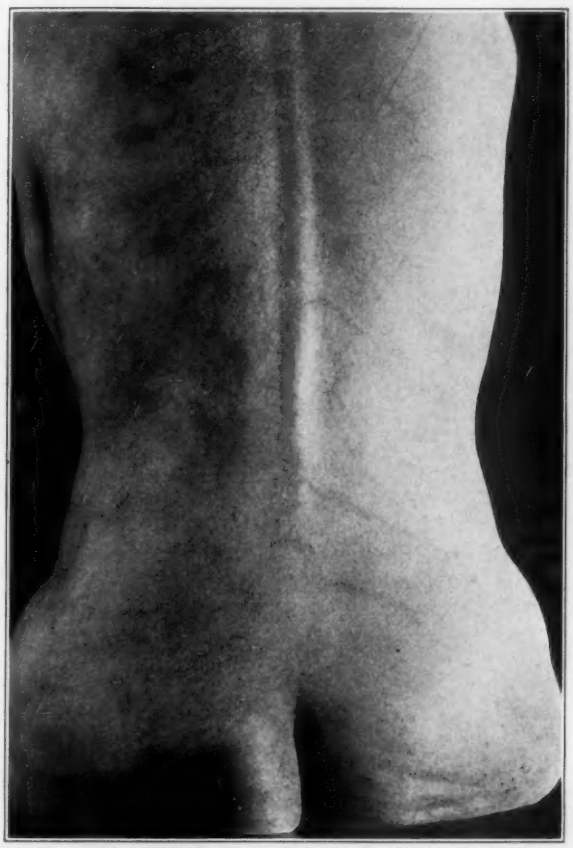

Fig. 2.—Circular and gyrate lesions, with borders slightly raised, composed of fine lichenified papules and scaling.

ing mycelium, characteristic of fungous invasion (fig. 3). Examination of material taken from the involved areas in the other cases also showed an identical extensive fungous invasion of the skin. Identification of the organism responsible for these lesions was made by a cultural and morphologic study of the fungus obtained from the infected material.

Cultural Study of the Fungus.—Small pieces of material obtained from the lesions were planted on Sabouraud's dextrose agar. After four

days at room temperature, each bit of inoculum sent out a radiating mycelial growth onto the agar. In a week the center of each growth was purple, owing to the formation of pigment in the agar. The cultures

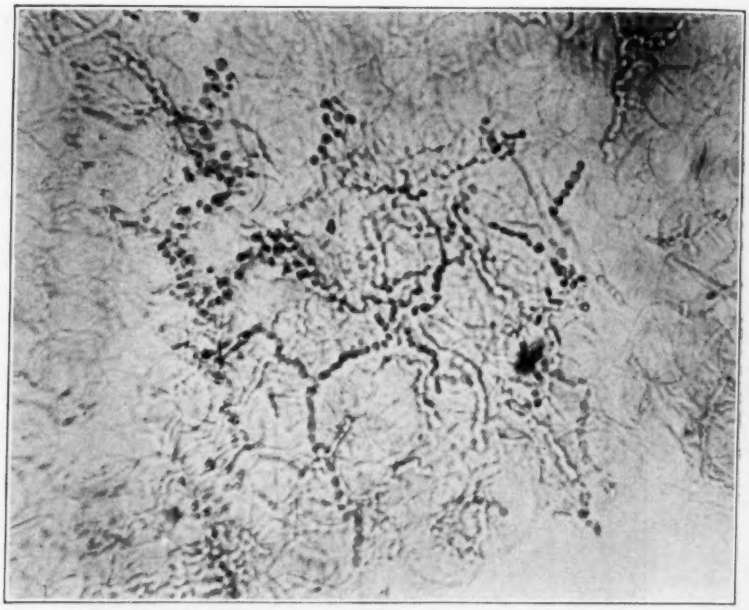

Fig. 3.—Invasion of skin by a branching network of mycelium. The hyphae have broken up into oblong segments. Other preparations showed continuous unbroken hyphae.

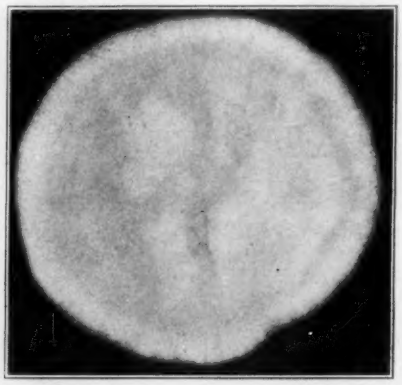

Fig. 4.—Culture of T. rubrum after three weeks on Sabouraud's dextrose agar (natural size).

at this time were close growing with little aerial mycelium and appeared moist around the periphery. After ten days, however, an aerial mycelium developed in the center of the colonies, giving a loose cottony appearance,

while the border of the colonies sloped off to the agar, forming a wide moist band around each growth. The purplish color noticed in the early cultures was readily seen around the periphery of these ten day growths. The central aerial mycelium, however, hid the color, but on the reverse side of the cultures the pigmentation was readily noticeable and was deep purple. After ten days the aerial mycelium lost its cottony character, giving way to a white powdery type of growth. This aerial powdery growth became pinkish in older cultures, while the pigmentation in the medium remained purple (fig. 4).

Transfers from the old pigmented cultures to fresh mediums showed a tendency to lose the purple pigmentation. The ability to produce any pigmentation was completely lost after three transfers. These cultures showed a raised center with close growing white aerial mycelium. The peripheries of these cultures were close growing and waxlike in appearance.

Morphologic Study of the Fungus.—A study of the morphology of the fungus isolated from these cases was made in the following way: First, material was taken from tube and plate cultures and carefully teased and mounted in lactophenol cotton blue; secondly, Van Tieghem cell cultures were made, and the fungus was studied in its living condition.

In stained preparations the pinkish powdery centers of the month old cultures were found to be almost entirely made up of microconidia. These small single-celled subspherical spores, because of their great numbers, were responsible for the powdery character of the cultures. While these microconidia were produced laterally along the slender hyphae in some cases (fig. 5, *5*), frequently side branches also bore the small conidia. In the type of growth in which side branching occurred, the conidia were closely arranged and gave the appearance of being borne in clusters (fig. 5, *1*).

A reproductive body different from the aforementioned single-celled microconidia was also found in cultures of this fungus. This spore was the typical macroconidium (fuseau) of the genus Trichophyton. This macroconidium was elongated, club shaped, clavate and multicellular, with thin smooth walls. It was bluntly rounded at the apex and had a broad base (fig. 5, *4*). These large conidia were borne in the mycelium of the cultures as terminal elements of blown-up or expanded ends of hyphae. There were at first few septums, but gradually others were laid down, and the general appearance of the enlarged, swollen apical portion of the hypha became that of the typical macroconidium or fuseau.

Although a study of stained material helps to identify fungi, a study of the fungus in its living condition should be attempted. This can best

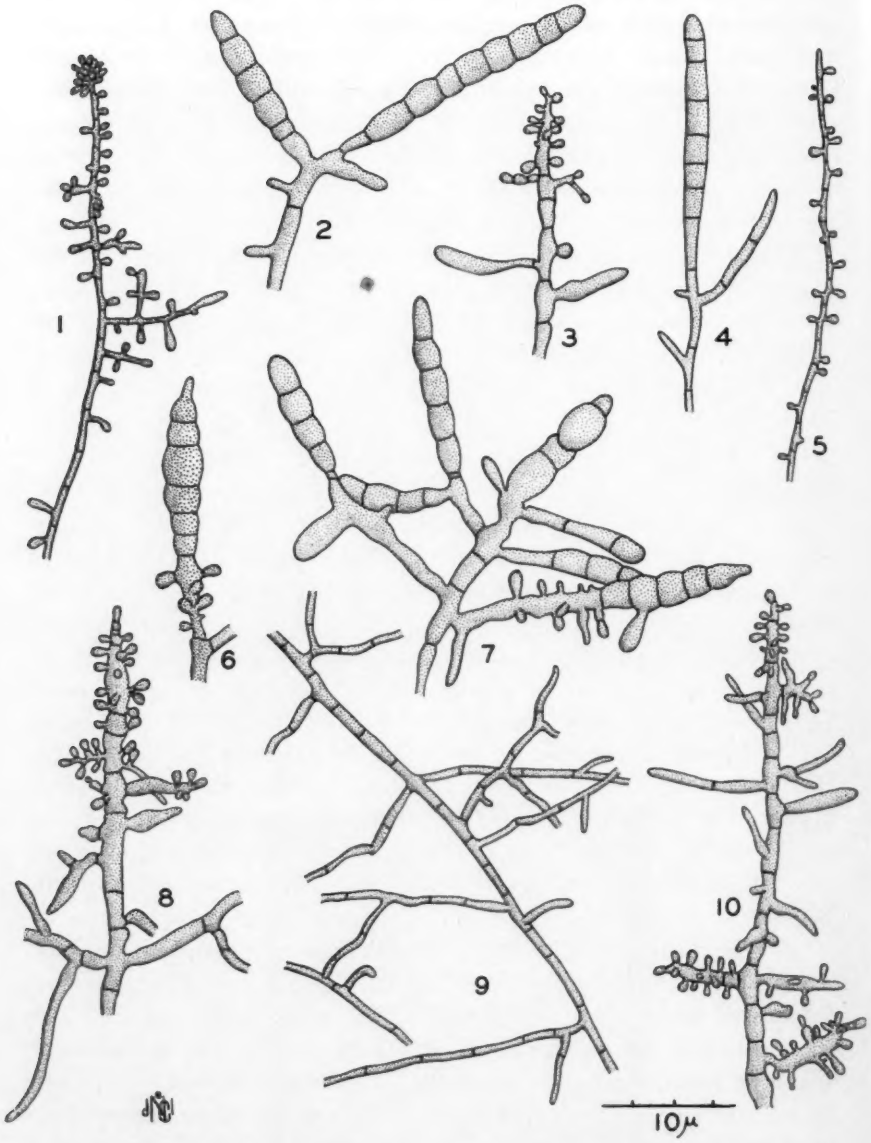

Fig. 5.—All drawings were made with the aid of a camera lucida (× 558). *1* and *5*, microconidia borne laterally and on side branches of slender hyphae. *2*, *6* and *7*, large swollen terminal structures seen in the medium of cell cultures. *3*, *8* and *10*, swollen mycelium branches with microconidia seen in the medium of cell cultures. *4*, typical macroconidium (fuseum) in aerial mycelium. *9*, slender anastomosing mycelium.

be accomplished by studying the development of the organism in cell cultures. Spring,[6] however, has found that several cell cultures of a single ringworm fungus should be studied to account for the morphologic variations which occur in a single species. For this reason, ten cell cultures were made and examined over a period of one month. Microconidia and fragments of hyphae germinated and produced a weft

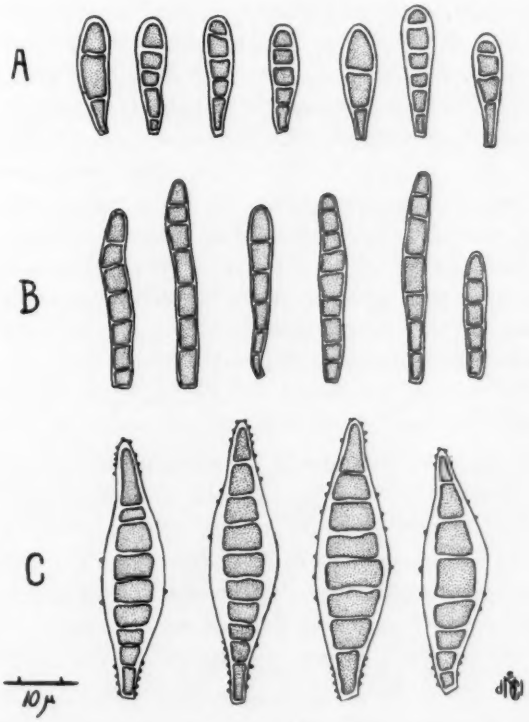

Fig. 6.—*A*, macroconidia (fuseaux) of the genus Epidermophyton. *B*, macroconidia of the genus Trichophyton. *C*, macroconidia of the genus Microsporon.

of slight, isodiametric, anastomosing mycelium (fig. 5, *9*). Occasionally portions of the mycelium became enlarged and swollen with cells of irregular diameter (fig. 5, *2*, *6* and *7*). These enlargements, occurring in the medium, became septate, with constrictions at each septation, giving the appearance of macroconidia. Other portions of the hyphae which became enlarged bore small single-celled microconidia along their swollen branches (fig. 5, *3*, *8* and *10*).

6. Spring, D.: Morphologic Variation Within the Same Species of Dermatophyte as Observed in Hanging-Drop Cultures, Arch. Dermat. & Syph. **23**:1076-1086 (June) 1931.

While other structures serve to help distinguish genera among the dermatophytes, the macroconidium is, perhaps, the most useful. Three types of these large spores distinguish the genera Trichophyton, Microsporon and Epidermophyton (fig. 6, *A*, *B* and *C*). The macroconidia of the genus Epidermophyton have two or more septums, are oval to obovate in shape and have a relatively thin and smooth wall (fig. 6, *A*). These differ from the macroconidia of Trichophyton, which are elongated, clavate, multiseptate and bluntly rounded at the apex and have a thin and smooth wall (fig. 6, *B*). The macroconidia of the genus Microsporon differ from the other two kinds in that they are multiseptate, spindle-shaped, pointed at the apex and narrowed to a broad base. The walls of these macroconidia are thick at the median cells and roughened at least at the extremities (fig. 6, *C*). These three types of macroconidia, then, clearly separate the genera of the dermatophytes by presenting differences in such distinct morphologic features as size, shape and character of the walls. The macroconidia borne in the aerial mycelium of our fungus were seen infrequently in the cell cultures on Sabouraud dextrose slants. They were found in greater number, however, on sterilized polished rice in flask cultures (fig. 6, *B*).

COMMENT

The fungus herein described was identified as belonging to the genus Trichophyton because of the typical macroconidia it produced when cultured on the standard mediums and on polished rice. The purplish pigmentation on the reverse side of the cultures and the pinkish color of the aerial mycelium would allow this fungus to be identified as one of several species to be found described in the literature. The fungus, however, lost its ability to produce pigment after two transfers. It is this tendency to lose characteristic cultural reactions which makes identification of the dermatophytes difficult.

Not only did this fungus vary in its gross cultural characteristics, but it showed a great variation in the production of microscopic characters. On Sabouraud's dextrose medium, for example, macroconidia were produced irregularly. At times it was necessary to examine cultures exhaustively before the large conidia could be found. However, it was found that the large conidia, characteristic of the genus Trichophyton, were produced in great numbers on polished rice in flasks. This is as Langeron and Milochevitch [7] found for the dermatophytes as a group; i. e., in cultures on natural mediums (grains of barley, wheat and rye) spore forms were produced in greater number and more frequently than

7. Langeron, M., and Milochevitch, S.: Morphologie des dermatophytes sur milieux à base de polysaccharides. Essai de classification, Ann. de parasitol. **8**:465-508, 1930.

in cultures on the standard agar mediums. Such irregularity of the formation of diagnostic structures in cultures adds to the difficulty of identifying the dermatophytes.

A further complication in identification of these fungi is the non-specificity in the type of lesion they may produce. That the same fungus may cause several different types of lesions or that the same lesion may be caused by different fungi has been stressed in the literature for years. In this respect, Langeron and Milochevitch [7] and Grigorakis [8] have pointed out the various clinical manifestations produced by the same fungus or by different fungi.

Because of these cultural, morphologic and clinical variations several species of Trichophyton have been described with which the fungus being reported may be identified. Recently Ota and Kawatsuré [9] made a critical study of several of these similar fungi, showed them to be variations of one species and reduced to synonymy with Sabouraudites ruber (Castellani; Ota and Langeron 1923) seventeen variously named species. Sabouraudites ruber, however, was a new name for a species which Castellani [10] had named Epidermophyton rubrum in 1910. This was changed by Sabouraud,[11] however, to T. rubrum in 1911. At this time Sabouraud acknowledged the priority of Castellani's fungus to that of Bang.[12] Trichophyton purpureum, which had been discovered and worked on by Bang in Sabouraud's laboratory. From a review of the literature it would seem that the synonymy of this group of fungi producing a red to purplish pigmentation should be as shown in the following tabulation:

Epidermophyton rubrum Castellani, Brit. J. Dermat. **22**:147-150, 1910.
Epidermophyton Perneti Castellani, Brit. J. Dermat. **22**:147-150, 1910.
Trichophyton purpureum Bang, Ann. de dermat. et syph. **1**:224-238, 1910.
Trichophyton rubrum (Castellani) Sabouraud, Brit. J. Dermat. **23**:375-402, 1911.
Trichophyton rubidum Priestley, M. J. Australia **2**:474, 1917.
Epidermophyton salmoneum de Mello, Compt. rend. Soc. de biol. **84**:239-240, 1921.
Trichophyton A Hodges, Arch. Dermat. & Syph. **4**:1-26 (July) 1921.

8. Grigorakis, L.: (*a*) Recherches cytologiques et taxonomiques sur les dermatophytes et quelques autres champignons parasites, Ann. d. sc. nat. (Botan.) **7**:165-444, 1925; (*b*) Dermatophytes et dermatomycoses, Ann. de dermat. et syph. **10**:18-53, 1929.

9. Ota, M., and Kawatsuré, S.: Sur le Sabouraudites ruber et ses variétés, Ann. de parasitol. **11**:476-501, 1933.

10. Castellani, A.: Observation on a New Species of Epidermophyton Found in Tinea Cruris, Brit. J. Dermat. **22**:147-150, 1910.

11. Sabouraud, R.: Eczematoid Ringworm of the Extremities and Groins: II, Brit. J. Dermat. **23**:375-402, 1911.

12. Bang, H.: Sur une trichophytie cutanée à grand cercles, causée par un dermatophyte nouveau (Trichophyton purpureum, Bang), Ann. de dermat. et syph. **1**:225-238, 1910.

Trichophyton B Hodges, Arch. Dermat. & Syph. **4**:1-26 (July) 1921.
Trichophyton marginatum Muijs, Nederl. tijdschr. v. geneesk. **65**:2205-2207, 1921.
Sabouraudites ruber Ota and Langeron, Ann. de parasitol. **1**:328, 1923.
Trichophyton lileum Kawasaki, Jap. J. Dermat. & Urol. **23**:940-964, 1923.
Trichophyton purpureum var. *I* Takahashi, Jap. J. Dermat. & Urol. **25**:251-286, 1925.
Trichophyton purpureum var. *II* Takahashi, Jap. J. Dermat. & Urol. **25**:251-286, 1925.
Epidermophyton plurizonforme MacCarthy, Ann. de dermat. et syph. **6**:31-37, 1925.
Epidermophyton lanoroseum MacCarthy, Ann. de dermat. et syph. **6**:49-53, 1925.
Trichophyton coccineum Katoh, Tr. Sixth Cong. Far East. A. Trop. Med., Tokyo, 1925, pp. 861-865.
Bodinia spadix Katoh, Tr. Sixth Cong. Far East. A. Trop. Med., Tokyo, 1925, pp. 865-866.
Trichophyton multicolor Magalhães and Neves, Mem. Inst. Oswaldo Cruz **20**: 271-298, 1927.
Sabouraudites plurizoniformis Brumpt, Précis de parasitologie, ed. 4, Paris, Librairie de l'Académie de Médecine, 1927, p. 1291.
Sabouraudites ruber var. *blanche* Hashimoto, Irizawa and Ota, Jap. J. Dermat. & Urol. **30**:243-251, 1930.
Bodinia spadicea Pollacci and Nannizzi, I miceti patogeni dell 'uomo e degli Animali, Siena, S. A. Poligrafica Meini, vol. 10, no. 91.
Trichophyton Kagawaense Fujii, Jap. J. Dermat. & Urol. **31**:305-357, 1931.
Sabouraudites ruber var. *III* Fujii, Jap. J. Dermat. & Urol. **32**:575-584, 1932.
Trichophyton coccineum var. *Leio* Nakamura, Jap. J. Dermat. & Urol. **32**:515-527, 1932.
Epidermophyton purpureum Dodge, Medical Mycology, St. Louis, C. V. Mosby Company, 1935, p. 485.
Ectotrichophyton Otae Dodge, Medical Mycology, St. Louis, C. V. Mosby Company, 1935, p. 500.
Favotrichophyton coccineum Dodge, Medical Mycology, St. Louis, C. V. Mosby Company, 1935, p. 524.
Favotrichophyton violaceum var. *marginatum* Dodge, Medical Mycology, St. Louis, C. V. Mosby Company, 1935, p. 524.

SUMMARY

Four cases of severe dermatophytoses causing an extensive lichenified eruption are reported. Two are described in detail.

Resistance to local treatment was uniform except that one ointment, consisting of 2 per cent chrysarobin, 6 per cent salicylic acid and 6 per cent precipitated sulfur in petrolatum, caused a limited amount of improvement.

Inhalations of ethyl iodide were of definite value and proved to be the most effective form of therapy in this type of case.

A cultural and morphologic study of the etiologic agent in these cases established T. rubrum (Castellani; Sabouraud 1911) as the causative fungus.

The probable synonymy of this species includes several fungi which produce a red to purplish pigmentation in culture.

THE MICROPAPULAR TUBERCULID

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AND
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MINNEAPOLIS

Micropapular tuberculid is the term which we have applied to a form of cutaneous tuberculosis composed of tiny papules occurring on the face. This type, while differing from both lupus miliaris disseminatus faciei and acnitis, may at times resemble rosacea.

Tuberculoderms, although subject to great clinical variations, have a fairly well established course and prognosis, especially in a specific case in which the characteristics conform strictly to a well recognized type of cutaneous tuberculosis. This is true of lupus vulgaris, lupus miliaris disseminatus faciei and acnitis. There are, however, patients on whom lesions are found, particularly on the face, which have a prolonged course and a tuberculoid structure but still do not conform morphologically to any of the aforementioned types.

Lewandowsky [1] in 1917 first described such a type of tuberculosis of the skin, which he called rosacea-like tuberculid. His classic description is now well known and has been reintroduced by the articles of MacKee and Sulzberger [2] and Wile and Grauer.[3]

We believe that the condition of patients having an eruption of the face consisting of small papules so arranged that they give the casual appearance of rosacea is often diagnosed as rosacea-like tuberculid when a careful analysis might reveal that the eruption belongs to some other type of tuberculosis, such as lupus miliaris disseminatus faciei, acnitis or even papular sarcoid. As is often the case in medical circles, a diagnosis is popularized without strict adherence to the criteria for the diagnosis. We believe that this is the case with rosacea-like tuberculid. We think that the term is objectionable and that it leads to mistaken diagnoses, for in all probability many lesions of resistant rosacea have been called tuberculous.

Read at the Sixty-Third Annual Meeting of the American Dermatological Association, Inc., Colorado Springs, Colo., May 30, 1940.

1. Lewandowsky, F.: Ueber rosacea-ähnliche tuberkulide des Gesichtes, Cor.-Bl. f. schweiz. Aerzte **47**:1280, 1917.

2. MacKee, G. M., and Sulzberger, M. B.: Rosacea-Like Tuberculid of Lewandowsky, Arch. Dermat. & Syph. **31**:159 (Feb.) 1935.

3. Wile, U. J., and Grauer, F. H.: Rosacea-Like Tuberculosis, Arch. Dermat. & Syph. **31**:174 (Feb.) 1935.

For some time we have observed patients having a small papular type of tuberculosis of the face. Some of these have presented features which undoubtedly were consistent with a diagnosis of rosacea-like tuberculid. Others, on the other hand, have had lesions which remained simply papular and presented no resemblance whatsoever to rosacea. Pautrier and his associates [4] also have described this form of tuberculosis, as the "micronodular" tuberculid. We should like to change the term "micronodular" to "micropapular," since in the American literature "papule" is synonymous with "nodule" as used on the Continent.

In all tuberculids of the face the papule is the basic lesion and can be used as the keystone on which a practical nomenclature can be built. We should like to bring forth for consideration the following terminology, based on variations in the size and type of the papule.

Fig. 1.—Miss C. J., aged 28. The eruption was of five years' duration. There was no resemblance to rosacea. The Mantoux reaction (1:1,000) was strongly positive. There were no clinical signs of internal tuberculosis. (Photograph of a patient of Dr. John Madden.)

1. Micropapular tuberculid
   - (*a*) Purely papular
   - (*b*) Rosacea-like
2. Lupoid papular tuberculid (lupus miliaris disseminatus faciei)
3. Necrotic papular tuberculid (acnitis)

4. (*a*) Pautrier, L. M., and Lanzenberg: Tuberculides de la face, à petits nodules non ulcérés (acnitis), Bull. Soc. franç. de dermat. et syph. (Réunion dermat., Strasbourg) **44**:2159 (Dec.) 1937. (*b*) Pautrier, L. M., and Woringer, F.: Tuberculides micronodulaires de la face, ibid. **45**:121 (Feb.) 1938. (*c*) Pautrier, L. M.: Tuberculides micronodulaires de la face, ibid. **45**:700 (May) 1938. (*d*) Pautrier, L. M., and Woringer, F.: Tuberculides micronodulaires de la face, du cou et de la poitrine, ibid. **46**:413 (April) 1930.

In order to adhere strictly to a concept one must define the appearance, course and healing of a tuberculid. In our opinion, the tuberculid is the most characteristic cutaneous manifestation of internal tuberculosis, and it should be looked on as a transient projection of the disease on the skin. The appearance and disappearance of tuberculids, therefore, must have to do with factors that control dissemination of the tubercle bacilli from their original focus. On the other hand, lesions in the skin

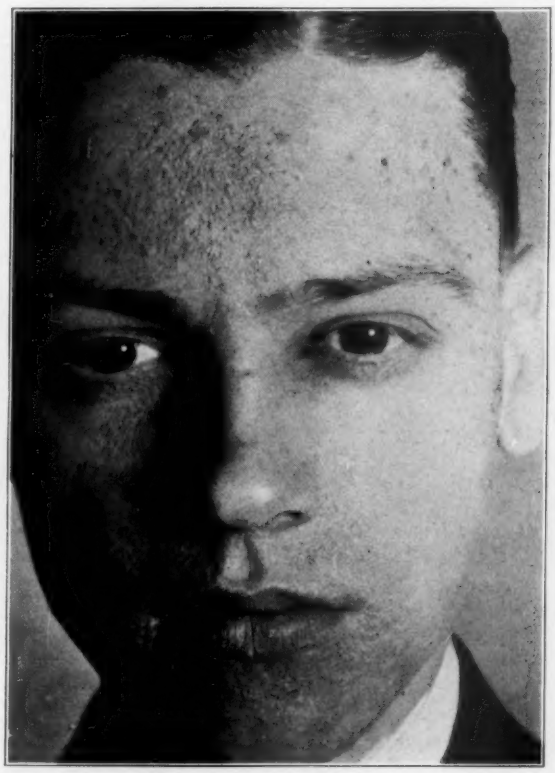

Fig. 2.—Mr. D. A., aged 20. The duration of the eruption was two months. The lesions were tiny reddish brown papules on the forehead, nose, cheeks and chin. The eruption did not resemble rosacea. Physical examination showed no visceral tuberculosis. The Mantoux reaction (1 : 1,000) was weakly positive. After six months of treatment, including roentgen irradiation, administration of gold sodium thiosulfate and generalized ultraviolet irradiation, the eruption disappeared completely and has not recurred in four years.

that possess undoubted characteristics of lupus must signify that the bacilli, having reached the skin, find it so receptive for the particular type of inflammation called lupus that the internal factors are not able to render the skin capable of eliminating or terminating the tuberculous

process. Hence it seems important that the term tuberculid be retained, in contrast always to lupus vulgaris.

What is the pathogenesis of the tuberculids? The most likely explanation is that the organisms are brought to the parts through the blood stream. Why the bacilli lodge in certain areas, especially the face, and produce lesions there cannot be explained. Why one particular type of lesion develops instead of another, of course, cannot be explained either. If it were known why lesions of tuberculosis develop in certain areas and what predisposes the tissues to a certain kind of response, it would be possible to predict events in cases of tuberculosis of the skin, which is now impossible. Immunologic studies have not yet afforded

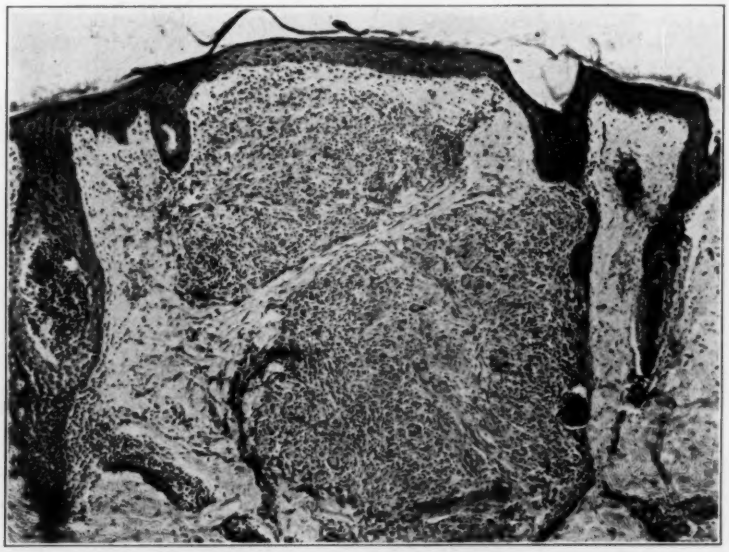

Fig. 3.—Histologic structure in case 2 (fig. 2). There were nodules of infiltrate in the upper and middle parts of the cutis. The structure simulated that of sarcoid, being composed chiefly of epithelioid cells. There were a few giant cells and lymphocytes.

an answer to the question. The studies of Jadassohn and his pupils have shown that quantitative intradermal tuberculin tests elicit reactions which are different in patients with tuberculoderms from those observed in normal persons. The sarcoid group is well known for its hyposensitivity to tuberculin. We do not believe that one can say that a particular degree of hypersensitivity to tuberculin must accompany a certain type of tuberculous lesion in order to make the diagnosis tenable.

Observation over many years has established well known facts about such forms of tuberculosis as lupus vulgaris, acnitis and lupus miliaris

disseminatus faciei. Additional information and opinion concerning a less well known type, such as the micropapular tuberculid, should be recorded, so that as much as possible may be learned about it.

We may begin the classification, then, with this smallest type of tuberculid, the micropapular.

A case of this kind was presented at a meeting of the Dermatologic Reunion of Strasbourg on Nov. 21, 1937 by Pautrier and Lanzenberg,[4a]

Fig. 4.—Mrs. M. H., aged 47. The eruption appeared suddenly and was of one month's duration. The lesions were reddish brown papules situated on the cheeks, nose, chin, auricles and front of the neck. There was a resemblance to rosacea, although there were no pustules. The Mantoux reaction (1: 1,000) was strongly positive. There was no clinical evidence of pulmonary tuberculosis. Response to treatment (roentgen irradiation and administration of gold sodium thiosulfate) was slow. There was great improvement, but not complete involution, within four months. The subsequent history is not known.

under the title of "micronodular tuberculid." Since then, at subsequent meetings [5] of the same society, 3 additional cases have been described.

5. Pautrier and Woringer.[4b] Pautrier.[4c] Pautrier and Woringer.[4d]

In Pautrier's cases the lesions, which appeared suddenly on the face, consisted of small, round, raised brownish violet papules which were distributed over the forehead, nose, cheeks and chin. In 1 the ears were involved, and in another there were papules on the neck and chest. The individual lesions were sharply circumscribed and showed a yellowish brown stain on application of diascopic pressure. Necrosis and ulceration were entirely absent.

In all of the 4 cases described by Pautrier the cutaneous reactions to tuberculin in dilutions of 1 : 1,000 were positive. No active focus of internal tuberculosis was discovered in any of the 4 cases, although 1 patient presented roentgen signs of old healed pulmonary tuberculosis.

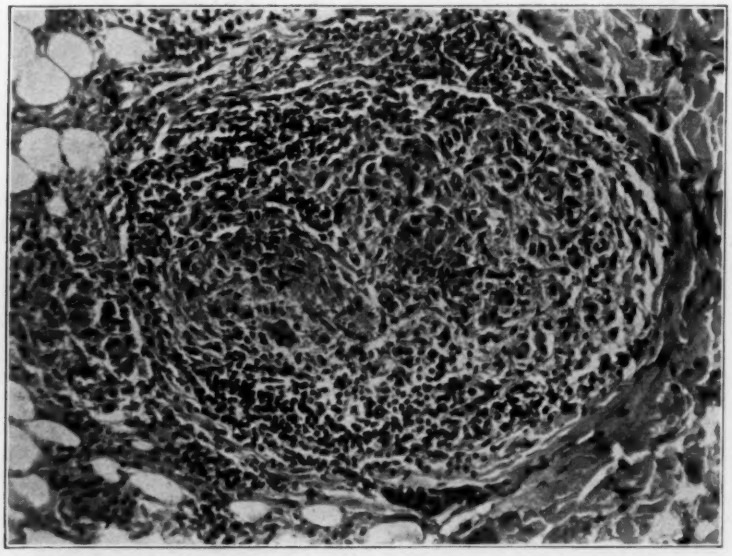

Fig. 5.—Histologic structure in the case illustrated by figure 4. The tuberculoid structure was deep in the cutis.

The 14 patients whom we have observed presented similar eruptions, occurring predominantly on the face, although in a few cases papules were present on the neck. The lesions differed from those of acnitis in that they were smaller, more numerous, not elevated and without macroscopic central necrosis. After disappearance of the lesions, varioliform scars often resulted. In some cases the eruption consisted entirely of these small papules, while in others there were papules and some hyperemia, which somewhat suggested rosacea. The basic papules appeared to be localized in the skin and not on the surface. The course of the disease was prolonged into months or even years but under management often came under control, and no new lesions formed.

When the lesions underwent involution they did so altogether in contrast to those of lupus miliaris disseminatus faciei, which disappear a few at a time. A history of actual tuberculosis or close association with tuberculous relatives could be elicited in most cases. The reactions to tuberculin (Mantoux 1 : 1,000) were positive in 12 of our cases and negative in 2. In the latter group it was extremely difficult to differentiate between micropapular tuberculid and sarcoid on the basis of

Fig. 6.—Mrs. L. A. C., aged 55. The duration of the eruption was one year. It was confined to the face.

either the clinical or the histologic observations. The relatively short course, however, led us to classify the lesions as the micropapular tuberculid.

In histologic sections Pautrier observed an infiltrate which was tuberculoid in structure and was located especially about the follicles. There was a tendency to disintegration of the tissues in the involved areas. For the most part the pathologic process appeared well circumscribed and sharply demarcated from the surrounding tissues. About the areas

of necrosis were numerous polymorphonuclear leukocytes forming tiny abscesses. At the periphery of such areas a heavy infiltrate was noted, consisting of lymphocytes, epithelioid cells and numerous giant cells. In certain places the capillaries were dilated and engorged with red blood cells. The epidermis overlying the lesions remained intact.

Pautrier and Woringer stated the belief that the histologic character of the micropapular tuberculid can be closely alined with that of the

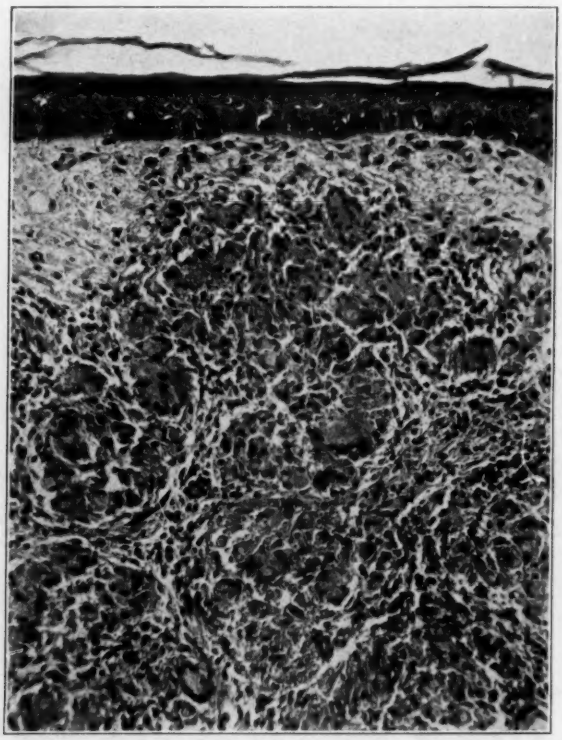

Fig. 7.—Histologic structure in the case illustrated by figure 6. There was an epithelioid type of tuberculoid structure extending throughout the cutis.

papulonecrotic tuberculid. In the former, however, the areas of necrosis are less extensive and do not encroach on or disrupt the continuity of the epidermis. In Pautrier and Woringer's opinion there are also rather intimate resemblances to lupus miliaris disseminatus faciei; the tuberculoid mass in the latter, however, is much more inflammatory and accompanied by more edema. Pautrier and Woringer stated that the central necrosis in lupus miliaris disseminatus faciei is less pronounced and more fibrinoid in appearance. The authors expressed the opinion

that it is difficult to separate these tuberculoderms on a purely histologic basis and that they are morphogenetically the same.

In order to evaluate the histologic observations associated with the micropapular tuberculid we thought it advisable to perform biopsies of the lesions of patients with incontestable rosacea. Accordingly, we examined sections from 30 such patients, and we believe that there should be no confusion microscopically between true rosacea and the tuberculids of the face. In those cases of rosacea in which giant cells are observed, they are usually located about a destroyed follicle, and true tubercle formation or even collections of epithelioid cells are absent.

We examined many sections from the 14 patients who had what we have critically diagnosed as micropapular tuberculid. In all instances in which there was any confusion concerning another form of tubercu-

Fig. 8.—Mrs. H. H. R., aged 30. She had had pulmonary tuberculosis twelve years previously. The eruption on the face was of two years duration. The microscopic section revealed a tuberculoid structure.

losis we excluded the sections from this analysis. We were immediately impressed by the fact that a pathognomonic picture was lacking, and we realized that even though our clinical diagnosis seemed certain beyond a shadow of a doubt we could never anticipate what the histologic picture would be.

The chief impression which we gained from a survey of our sections was that the micronodular tuberculid can be alined histologically with the chronic indurative type of tuberculosis. In analyzing the component parts of the skin from these patients we found that the epidermis was almost invariably atrophic, which is in keeping with the observations in cases of lupus miliaris disseminatus faciei and sarcoid but in distinct contrast to those associated with lupus vulgaris, with which acanthosis

is often noted. The epidermis also remained intact, which is in contradistinction to the papulonecrotic tuberculid.

As was to be expected, the infiltrate varied in every case. In some sections it was high in the corium and consisted of whorls of pure epithelioid cells with an occasional giant cell and no coexisting acute inflammation. In other sections the infiltrate appeared as vertically placed lobes extending down to the hypoderm. Still another type of

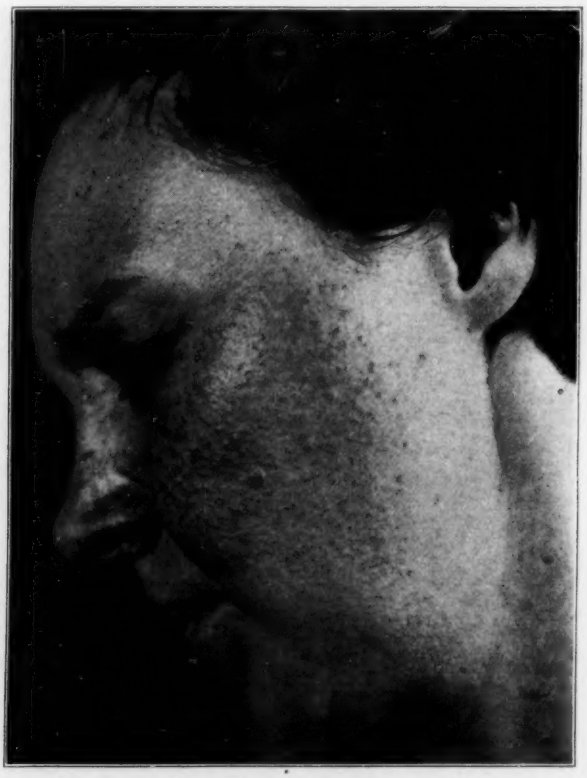

Fig. 9.—Mrs. F. C., aged 36. The eruption was of three years' duration. The Mantoux reaction (1 : 1,000) was positive. There were no signs of visceral tuberculosis.

infiltrate noted was tuberculoid structure surrounded by considerable banal inflammation. Necrosis and liquefaction were not encountered.

In summarizing the histologic picture of the micropapular tuberculid we wish to stress its extreme similarity to that of sarcoid. Had we not studied the eruption clinically we should have made a diagnosis of sarcoid from some of the sections alone. For comparison we also studied tissues from 8 patients with unquestionable sarcoid on the face and 5 patients with lupus miliaris disseminatus faciei. We found it difficult to draw

sharp lines of differentiation between any two of the three conditions, and we are certain that histologic examination alone is inadequate for an accurate diagnosis.

If one considers the course of the tuberculids, lupus vulgaris, cutaneous sarcoids and tuberculosis colliquativa, one is impressed by the fact that the tuberculids require the shortest time to complete their cycle, being followed by the sarcoids, tuberculosis colliquativa and lupus vulgaris respectively. In attempting to classify a form like the micropapular tuberculoderm it is important that one associate it with the tuberculids because of its sudden appearance and its healing within a relatively short period.

Pautrier expressed the belief that the micropapular tuberculid is closely related to acnitis and that the latter represents basically the micropapular tuberculid in which the pathologic changes are more severe and destructive, leading to clinically demonstrable necrosis. Evidently his examinations led him to this conclusion, while from our own studies we are inclined to aline the condition with the lupoid types. Also, the dividing line between the micropapular tuberculid and lupus miliaris disseminatus faciei is certainly not sharp, the chief difference being that the lesions of the latter are larger and fewer. In all probability many cases of micropapular tuberculid have been demonstrated as examples of lupus miliaris disseminatus faciei.

Continuing the classification based on variations in the size and type of papule in the various tuberculids, we should like to propose the term "lupoid papular tuberculid" for lupus miliaris disseminatus faciei.

For many years authorities have been perplexed in classifying this form, and there has been much debate as to whether it should be grouped with true lupus vulgaris or with the tuberculids. If one recalls the criteria which were previously outlined for the tuberculids, one is at once driven to group this type with the tuberculids, since it fulfils all the criteria, even though an individual lesion may be indistinguishable from a single nodule of lupus vulgaris or a papule of sarcoid. The lupoid papular tuberculid (lupus miliaris disseminatus faciei) may, then, be the transitional condition between the relatively fixed tuberculoderms, such as lupus vulgaris on the one hand and the more labile tuberculids on the other.

Well developed lupoid papular tuberculids are characterized by firm, discrete papules which occur singly or in groups and vary in color from light pink to brownish red. The eruption is confined to the face and is often seen about the eyelids, cheeks and mucocutaneous surfaces of the lips. Even the neck is unaffected. The individual lesions cannot be differentiated from minute nodules of lupus vulgaris. As a rule, however, those of the lupoid papular type are harder, do not enlarge by continuity and remain discrete throughout their course. The papules

attain their maximum size and number shortly after their appearance and remain stationary throughout the long course of the disease. There is no reaction of the skin surrounding the lesions as in the necrotic papular tuberculid. Edema, suppuration or change in the contour of the face is lacking. With a probe or a microcautery one can pass readily through the tuberculous infiltrate and feel the resistance of the harder surrounding tissues. Healing is spontaneous, the lesions gradually shrinking away without sloughing or crusting and leaving small pitted scars.

In our examinations we have found that the histologic changes are inconstant. This is in contrast to the opinion, almost universally expressed in the literature, that this type of tuberculid has a well defined microscopic picture. This picture depends to some extent on the time in the course of the disease when the excision was made and the precise location of the section. We have found well demarcated, globular masses of tuberculoid infiltrate made up of epithelioid cells, giant cells and lymphocytes, which were located high in the corium. Although necrosis is not a clinical feature, central caseation was seen in some sections, surrounded by an inflammatory mass separating it from the surrounding tissues. Tubercle bacilli have been demonstrated in such sections. Patients who have the lupoid papular tuberculid are usually hypersensitive to tuberculin. Some observers, however, have noted the opposite.

In the classic form of lupoid papular tuberculid the strict localization to the face should again be emphasized, because in this respect this condition stands in sharp contrast to acnitis and miliary sarcoid. Another point which has impressed itself on our minds is that patients who have had the lupoid papular tuberculid and who have been followed for many years have never reported a recurrence, which is quite different from our experience with the necrotic papular tuberculid.

The necrotic papular tuberculid constitutes the third main subdivision of the tuberculids. In our opinion the term necrotic papular tuberculid is preferable to such designations as acnitis, folliclis and papulonecrotic tuberculid, since it again emphasizes the papule as the basic lesion. As a rule, this type of tuberculid is not confined to the face, which is usually involved as part of a more or less general outbreak. This may be significant, in that the entire organism is in a higher state of response to the invading organism. Necrotic papular tuberculids are shotty papules which stand above the level of the surrounding skin and often have central necrosis, which may be destructive, giving rise to scars when healing occurs. The lesions are dark red or bluish red rather than the brownish red or apple jelly color of the papules in the lupoid papular tuberculid. The lesions develop rapidly, are extremely labile and accordingly run a short course and disappear, resembling a suppurating folliculitis or small furuncles. The time between attacks is variable; it

may be years, or a new series of lesions may appear as the earlier ones are healing. A more or less continuous appearance and disappearance of sparse but widely disseminated papules has also been noted. We have often seen necrotic papular lesions side by side with the deeper plaques of erythema induratum, and we believe that they are essentially the same lesions, varying only in size and depth.

Histologically the necrotic papular tuberculid is characterized by a central area of acute necrosis surrounded by a zone of inflammation which may be tuberculoid in structure, especially at the periphery. The histologic observations are uniform in type but not in extent. There is no need to enlarge further on the histologic features, which are well known.

Patients having the necrotic papular tuberculid react strongly to tuberculin. Internal tuberculosis can almost always be found in these patients.

Many astute observers have pondered over the specificity of the necrotic papular lesion and its wide extent. Its coexistence with other follicular lesions, including acne vulgaris, again leads us to hypothesize that this type of person has a tendency to develop acneform lesions.

The small papular varieties of sarcoid, especially on the face, may easily be confused with the micropapular or lupoid papular tuberculid. The papules of sarcoid on the face are harder, and necrosis and ulceration are entirely lacking. Their color is usually pink or light reddish brown, and frequently they exhibit a peculiar opalescence or translucence not seen in the lupoid papular tuberculid or other facial tuberculoderms. The development is gradual; the course is slower than that of any of the other conditions under consideration, and regression is much delayed. In contrast to the lupoid papular tuberculid, new lesions frequently develop while the patients are under observation. In contrast to acnitis, the skin overlying the papules of sarcoid always remains intact. There may be considerable erythema of the skin, resembling rosacea. After regression of the lesions of sarcoid the skin may become atrophic and even telangiectatic, but varioliform scarring does not result as in the other conditions under discussion.

Histologically the lesions may be made up entirely of closely packed epithelioid cells divided by septums of connective tissue. At times giant cells are present in varying numbers, and an encircling wall of lymphocytes is occasionally observed. Necrosis and ulceration are never encountered.

The extreme chronicity of cutaneous sarcoids, the lack of subjective symptoms and the absence of ulceration, coupled with characteristic histopathologic observations and hyposensitivity to tuberculin, are the chief points in differential diagnosis. Lesions in other organs are frequently encountered.

In this presentation it has not been our intent to offer a new nomenclature but to set forth our views on the tuberculids of the face and to make suggestions toward a simpler terminology founded on variations in the size and type of the essential lesion of all tuberculids, the papule. Following this concept, we believe that the designation micropapular tuberculid is an apt one for a basic type of tuberculid which in certain patients bears a striking resemblance to rosacea.

In the difficulty encountered in properly diagnosing tuberculids of the face one should take many factors into consideration. Undue emphasis should not be placed on the distribution alone, nor should an impression be gained from the initial inspection of the eruption, since repeated observations are frequently necessary for accurate diagnosis.

A definite decision having been made that the case is one of tuberculosis, the next step is to rule out lupus vulgaris and sarcoid, a procedure which for the latter condition may be extremely difficult, since the small papular varieties closely resemble facial tuberculids both clinically and histologically. If this has been accomplished, the decision will be between the three main types of tuberculids, the micropapular, the lupoid papular and the necrotic papular.

The features of the eruption, such as the size, color, shape, age, number of the lesions and presence or absence of secondary changes, such as pustules and hyperemia, are the chief factors in arriving at a diagnosis. It should again be emphasized that the histologic observations are, as a rule, not conclusive. In eruptions resembling rosacea we have found that the histologic structure was definitely that of sarcoid. We have also been impressed with the fact that in certain cases which clinically were classic examples of the lupoid papular tuberculid the histologic picture strikingly simulated that of sarcoid. Thus a careful analysis of all the factors of a facial tuberculoderm is essential to accurate diagnosis, and the latter is a requisite for correct prognosis.

In studies of cutaneous tuberculosis, unfortunately, the diagnosis is often made without demonstration of the tubercle bacillus, for this is a tedious and often unfruitful procedure. Since there is no serologic test for tuberculosis, there is a certain presumption in classifying what we have called micropapular tuberculid with tuberculosis. This, however, also applies to sarcoid, and one must constantly keep in mind that the future may reveal other causes for these conditions.

In attempting to take a kaleidoscopic view of this condition one sees on the one extreme the patient with the diffusely erythematous eruption closely simulating mild so-called lupus pernio and on the other extreme the patient presenting multiple closely studded papules involving almost the entire face. Between the extremes will be found the average for this condition; that is, an eruption consisting of small papules as previously described. In our opinion the term micropapular is preferable to rosacea-like tuberculid.

ABSTRACT OF DISCUSSION

DR. HAMILTON MONTGOMERY, Rochester, Minn.: Drs. Laymon and Michelson have given a very clear presentation. It is true that there are micropapular or micronodular tuberculids of the face which do not show features of the rosacea-like tuberculid of Lewandowsky or of lupus miliaris disseminatus. Where should one draw the distinction between the papule and the nodule? Histologically, in the cases presented by Drs. Laymon and Michelson the lesions extended down to the hair follicles, and in other cases I have seen them extending even into the subcutaneous tissues. Therefore, histologically one is dealing with minute nodules and not papules. Clinically and histologically, so-called papulonecrotic tuberculid is definitely a nodular and not a papular eruption.

Although the term "rosacea-like tuberculid" may be somewhat confusing to students, I should not like to see it abandoned, because in many cases micropapular or micronodular tuberculid has features of rosacea, and it is frequently misdiagnosed as acne rosacea. All transitions between lupus miliaris disseminatus and rosacea-like tuberculid may be seen, and all represent hematogenous forms of tuberculosis. This is also true of sarcoids, including the so-called miliary types. It is my belief that there are too many subdivisions of cutaneous tuberculosis based purely on morphologic grounds. Thus, the sarcoid of Boeck is superficial; the sarcoid of Darier-Roussy is simply a deep subcutaneous form of sarcoid, and lupus pernio histologically is sarcoid of Boeck plus superficial dilatation of the capillaries and lymphatics. All are hematogenous types of tuberculosis.

Much remains to be explained in regard to cutaneous types of tuberculosis. For instance, in lupus miliaris disseminatus (tuberculosis cutis follicularis disseminatus) the tuberculin reaction is usually negative, yet the histologic picture is characteristically that of tuberculosis, showing many typical tubercles and definite caseation necrosis, whereas many of the rosacea-like tuberculids, including the papular or nodular type just described by the authors, may coexist with a positive tuberculin reaction and histologically show small epithelioid tubercles simulating the pathologic picture seen in various types of sarcoid.

DR. CLARK W. FINNERUD, Chicago: I should like to ask Dr. Laymon where in this classification he would include acne telangiectodes of Kaposi. In my opinion, and I saw a goodly number of cases of this condition in Vienna, it does not fit in clinically with acnitis, with the so-called rosacea-like tuberculid of Lewandowsky or with lupus miliaris disseminatus faciei.

DR. JAMES R. DRIVER, Cleveland: What I have to say is not particularly on the subject, as treatment has not been spoken of, but I should like to record an experience that I had recently with a case of lupus miliaris of this lupoid papular type in a patient who had about twenty lesions on the face. I used solid carbon dioxide, and a single treatment to each of the lesions made them disappear. To date there has been no recurrence.

DR. HENRY E. MICHELSON, Minneapolis: Dr. Laymon and I well realize that, when tuberculosis is the subject for discussion, a great deal can be said and that we could probably not convince any one whose views are fixed that our viewpoint is the correct one. However, we have no such intention. We thought that the term "rosacea-like tuberculid" had been used too freely, and when we attended clinical meetings we saw patients whose condition was so labeled but that did not give us, at least, the impression of tuberculosis. At best, the diagnosis of rosacea-like tuberculid is not an easy one, and possibly such an entity exists and cannot be definitely alined with tuberculosis. To me it is a great deal like seeing

a horse with a long neck and calling it a giraffe-like horse. It is still a horse. If this condition is tuberculosis the nomenclature should be based on that conception alone.

Dr. Montgomery has given such a broad survey of the whole subject of cutaneous tuberculosis that I shall not attempt to answer any particular part of his discussion. I do not know just where the line between a papule and a nodule is. One always thinks of a nodule as a larger lesion than a papule, and because the lesions in this particular type of disease are so small, we call them micropapules. The lupoid papular tuberculid, the so-called miliary facial lupus, is not follicular; that we are convinced of. The article of Arndt proved this long ago, and we have verified his work repeatedly.

I should like to call your attention to the fact that there may be many bacilli of tuberculosis in the skin of tuberculous persons which do not produce lesions. Keeping this in mind, Dr. E. M. Rusten and I are making excisions from patients at the Glen Lake Sanatorium to determine whether tuberculoid structure is present in banal conditions in the tuberculous patient.

The tuberculin test has been overrated, to my mind, as an aid in the differential diagnosis of different forms of cutaneous tuberculosis. About treatment, it is my feeling that in most patients with the type of facial tuberculosis that we are discussing the condition takes a course which is fairly individual for each patient. Some get well rapidly and others much more slowly. We have not observed recurrences, but possibly time will cause us to change that statement.

ARSENIC AS THE CAUSE OF CANCER OF MUCOUS MEMBRANE

REPORT OF A CASE

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AND
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Arsenic in its inorganic form is now fully accepted as a cancerigenic agent. Whether this is also true of the organic forms is still doubtful; although malignant changes probably follow their administration, the changes may be the result of arsenic as an element. If so, it would seem to work its havoc as the result of chronic irritation rather than of any specific cancerigenic qualities, and the unknown factor is as elusive as ever. In the case reported here the common cutaneous lesions produced by arsenic were present but the case was of unusual interest because it was possible to demonstrate the metal in a papilloma and a carcinoma of the internal mucous membranes by microchemical studies, thus proving beyond much doubt that arsenic was at least a factor.

REPORT OF CASE

The patient, a retired physician now aged 70 years, was first seen by us in 1928. At that time he complained of keratotic lesions of the palms and soles and of large numbers of erythematous, scaling plaques, some indurated and some ulcerating, on the trunk, thighs and legs (fig. 1). The familial and the early personal history were not relevant. Epilepsy developed in 1904, when he was 34 years old. Dr. Hugh Patrick at that time prescribed solution of potassium arsenite U. S. P. (Fowler's solution), which the patient took steadily until 1914, when he changed to sodium phenobarbital and took no more arsenic. At one time Dr. Harvey Cushing performed an exploratory operation in the right temporoparietal region but found no abnormalities. There was no history of venereal disease, and repeated Wassermann tests of the blood gave negative reactions. He first noticed the palmar and plantar keratosis in 1918, four years after he had stopped taking arsenic, and the first lesions appeared on the trunk a year or two later.

Examination showed him to be healthy looking, with no internal complaints; the problem that concerned him when first seen was that of the cutaneous lesions, particularly the tendency of some of them to ulcerate. These all healed, however, after treatment with roentgen rays or destructive measures whenever treatment was thought desirable.

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Fig. 1.—Arsenical keratoses on the chest, arms and abdomen.

Fig. 2.—Basal cell epithelioma in arsenical keratosis. × 85.

In July 1935, for the first time, he noticed in the voided urine a brownish discoloration, some blood clots and pus. Occasionally he also noticed slight suprapubic aching and slowing of the urinary stream. He was then referred to a urologist, who in August removed the right ureter and kidney. The lower third of the ureter contained a soft, movable mass about 1.5 cm. in its greatest diameter, which on microscopic examination was pronounced a papilloma. After the operation there was an uneventful recovery, but in December of the same year he again complained of symptoms referable to the urinary tract. Cystoscopic examination

Fig. 3.—Arsenical sulfide crystals in a section stained by Osborne's method. × 600.

showed papillomatous lesions behind the vesical neck and posteriorly. These growths were subjected to biopsy and fulgurated transurethrally. The pathologist reported them as malignant. A second fulguration was performed in 1936. Since then the patient has had no complaints except those referable to the skin.

Pathologic Studies.—Microscopic examination of the ureteral papilloma showed a definite papillomatous structure. The epithelial cells stained deeply; they were irregular in size and shape, with pyknotic nuclei. Mitotic figures were rare. There was considerable round cell and eosinophilic infiltration. There was no definite evidence of malignancy, but the urologic literature indicates that all ureteral papillomas in the course of time become malignant.

Microscopic examination of the papillomatous growths of the bladder showed definite malignant changes. A section recently removed from an area of chronic dermatitis without evidence of ulceration did not show anything to point to malignant changes. Another section, subsequently removed, macroscopically strongly suggested Bowen's disease but microscopically was a rather typical basal cell epithelioma (fig. 2). Sections of the papilloma of the ureter, the malignant tumor of the bladder and the skin were studied by Osborne's method. The vesical carcinoma showed many arsenic crystals (fig. 3), but only occasional crystals were seen in the ureteral papilloma and in the first section of skin. The second section of skin was not subjected to microchemical study.

COMMENT

The patient presented classic arsenical keratoses of the palms and soles. The keratoses of the trunk and extremities were of the arsenical rather than of the superficial epitheliomatosis type, if strict differentiation is justifiable. Some of the keratoses strongly suggested Bowen's disease, one such lesion being examined microscopically. A section of a simple keratotic lesion of the trunk merely showed dermatitis and the presence of arsenic crystals in moderate amount, which, as Montgomery has recently emphasized, is not necessarily of etiologic significance. Of particular interest was the development of a ureteral papilloma, potentially malignant, and of definitely malignant vesical papillomas in a patient with a prolonged history of ingestion of arsenic. In the ureteral papilloma arsenic was demonstrated in a moderate amount and in the vesical papillomas in a considerable amount. While it is true that the mere presence of arsenic in a lesion does not incriminate this element as the etiologic factor, we feel that the evidence is about as good as can be obtained today that arsenic was at least a factor in the production of this patient's ureteral and vesical papillomas, admitting freely the existence of an undiscovered etiologic factor or factors in all cancer.

LITERATURE

Since in the case reported the evidence points strongly to arsenic as a causative factor not only of precancerous cutaneous lesions but of precancerous and evidently cancerous lesions of the mucous membranes, the thought arises that arsenic may frequently be the cause of cancer in certain areas, such as the gastrointestinal, the respiratory and the genitourinary tract. This question manifestly has not been given the attention it deserves. All modern studies indicate that arsenic is introduced into the human body as the result of a variety of factors, such as ingestion of sprayed vegetables and fruits, drinking of contaminated water, inhalation of dust containing arsenic used in horticulture and agriculture, exposure in mines or in industry and administration of arsenic as a medicament. In contrast to a large number of studies indicating the almost universal

presence of arsenic in the human body, it is impossible to find any studies of the presence of arsenic in a series of carcinomas of the mucous membranes. It might be assumed that if arsenic were a reasonably frequent cause of such lesions the arsenic eaters in Styria might be a fertile field for investigation. The literature strongly indicates, however, that the whole story of these arsenic eaters is largely a myth.

Two large groups exposed for considerable periods and to quantities of arsenic are arsenic miners and persons employed in the sheep dip industry, but even among these there is, so far as the literature is concerned, no evidence that arsenic is a common cause of cancer of the mucous membranes. However, there is also no evidence that such carcinomas as occur have been studied by microchemical methods. The one exception is pulmonary cancer as seen in arsenic miners, but in this condition arsenic probably acts as a direct irritant to the lining of the trachea and bronchial tree. It was difficult to find any concrete cases reported in which arsenic was probably the cause of cancer of mucous membrane as the result of hematogenous distribution. Ullmann [1] cited the case of a woman who had taken solution of potassium arsenite (Fowler's solution) for years; the common cutaneous complications developed, and toward the end there occurred cancer of the tongue and mucous membrane of the cheek. Mayer [2] stated that he has knowledge of only 4 cases of cancer of the mucous membranes, 1 each of lingual, oral, anal and vulvar carcinoma. If these were individually reported, we had no access to the reports. Morson,[3] although he did not specifically make this claim for arsenic, rather emphatically expressed the belief that dyes and other chemicals through hematogenous distribution may be the cause of cancer of the genitourinary tract. It would seem either that arsenic is rarely the cause of cancer of the mucous membranes through hematogenous distribution or that the whole problem has not received the investigation it deserves. In our opinion a series of carcinomas of the mucous membranes, e. g., those of the stomach, should be examined by microchemical methods even when the patient has no other evidence of injury due to arsenic. While we are fully aware that the mere demonstration of arsenic sulfide crystals in a carcinoma does not prove that arsenic has been an etiologic agent, such a demonstration in a series of carcinomas would point to arsenic as a possible factor. It is an accepted fact that arsenic does not affect all persons in the same manner; hence some have keratoses after small medicinal doses, and others do not, even

1. Ullmann, K., in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1932, vol. 12, pt. 2, p. 619.

2. Mayer, R. L., in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1933, vol. 4, pt. 2, p. 64.

3. Morson, C.: Brit. J. Urol. **5**:333, 1933.

after prolonged use. Mayer [4] emphasized the experimental fact that a 1 : 40,000,000 solution of arsenic will change embryonal cells to tumor cells. Some keratoses become cancerous and others do not, even in the same person. It does not seem unreasonable, therefore, to assume that cancers of mucous membrane may develop as the result of hematogenous distribution of arsenic without the presence of the well known cutaneous lesions.

SUMMARY

A case is reported in which cutaneous eruptions due to arsenic were followed by cancer of the mucous membranes of the ureter and bladder. Arsenic was demonstrated by microchemical methods in all the growths but in largest quantity in the cancer of the bladder. This, so far as we could learn, is the only case of this kind so far reported.

It would seem that either cancer of the mucous membranes due to hematogenous distribution of arsenic is very rare or the matter has not been sufficiently investigated.

Drs. Rusche and Bacon have furnished sections of the ureteral papilloma and the vesical carcinoma for further study. Dr. Hamilton Montgomery's opinion was obtained on these sections as well as on the first section taken from the skin.

ABSTRACT OF DISCUSSION

DR. HAMILTON MONTGOMERY, Rochester, Minn.: This subject has been of great interest to me. I might cite case 2 in a former report of my own (Arsenic as an Eitologic Agent in Certain Types of Epithelioma, ARCH. DERMAT. & SYPH. **32**:218-236 [Aug.] 1935). A farmer aged 42 years was first seen in the clinic in 1927. He had epithelioma of the left sole following arsenical keratoses. The lesion histologically was a squamous cell epithelioma, grade 3. Seven years later there developed numerous arsenical epitheliomas on the trunk, histologically grade 1 and 2 squamous cell epitheliomas, and one superficial epithelioma, histologically a basal cell epithelioma. Crystals of arsenic trisulfide were demonstrated in the epithelioma of the arsenical type. In February 1934 there developed an intraurethral epithelioma, grade 3, also arsenical. The penis was partially amputated. There had been no recurrence of the intraurethral epithelioma when the patient was seen in 1938, at which time a bronchoscopic examination revealed a grade 4 epithelioma of the bronchus. Again this tumor showed vacuolation of cells and malignant dyskeratosis simulating Bowen's disease, which is a characteristic feature of the arsenical type of epithelioma. The patient died of extensive metastases in February 1940.

I have pointed out that it is important to distinguish between superficial epitheliomatosis, Bowen's disease and superficial epitheliomas arising from arsenical keratoses or as a result of ingestion of arsenic independent of the keratoses (Precancerous Dermatosis and Epithelioma in Situ, ARCH. DERMAT. & SYPH. **39**:387-408 [March] 1939). In 4 cases of superficial epitheliomatosis that I have studied recently the growths had fine threadlike borders and histologically were typical

4. Mayer, R. L., in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1933, vol. 4, pt. 2, p. 72.

basal cell epitheliomas but revealed no arsenic either by quantitative chemical analysis or by the microchemical method of Osborne. Osborne's method I believe to be accurate if used with fresh formaldehyde-fixed tissue and with proper technic. The case reported by Drs. Goeckerman and Wilhelm and the subsequent course in the case which I previously reported emphasize that the mucous membranes are not infrequently involved in cases of the arsenical type of epithelioma.

DR. NELSON PAUL ANDERSON, Los Angeles: Drs. Goeckerman and Wilhelm are to be complimented on producing the first paper in the English language calling attention to the possible role of arsenic as a carcinogenic agent in cancer of the mucous membrane.

As they more or less limited their paper to that phase of the subject, I shall not discuss the cutaneous manifestations of arsenic intoxication in which I have been interested for some time.

Recently I have seen a man about 21 years of age who at the age of 14 took arsenic for about six months. At 21 years of age he presented multiple arsenical keratoses on the palms and soles, multiple superficial epitheliomas of the trunk, a large fungating grade 2 prickle cell epithelioma in one groin and an extremely large fungating carcinoma of the tongue. It is suggestive that all of these lesions were present at one time.

I think all dermatologists will admit that keratoses of the palms and soles of a certain type are due only to arsenic. Some believe that most of the superficial epitheliomas of the trunk are due to arsenic. When, in addition, there are prickle cell epitheliomas on the cutaneous surface and a prickle cell epithelioma of the tongue, I think the conclusion may be drawn from clinical grounds alone that arsenic is undoubtedly a factor in producing cancer of the mucous membranes.

I think that as time goes on further observations will be made which will bear out this original piece of work indicating that arsenic is not to be neglected as an etiologic agent in any mucous membrane carcinoma.

DR. LOUIS SCHWARTZ, Washington, D. C.: I thank you for granting me the privilege of making a few remarks.

I have heard papers presented on arsenical keratoses a number of times, and I have also seen arsenical keratoses. In every case the arsenical keratoses were caused by ingestion of arsenic and never by contact with arsenic.

Many of the European writers, for example, Prosser-White and Oppenheim, have mentioned that arsenical keratoses and arsenical carcinomas occur in miners having contact with arsenic-containing ores.

The public health service made a survey of cutaneous hazards among workers handling arsenic in the United States. During the course of this survey hundreds of men who manufacture arsenical insecticides and thousands of men who use arsenical insecticides in orchards in California, Florida and other states were examined. No case of arsenical keratoses or arsenical cancer was observed among these men, whose skins and, perhaps, lungs are exposed to arsenical dusts.

Moreover, in studying the records of compensation boards for the last six years—that is, compensation boards for industrial diseases—that come to the office (in all the states which have compensation boards cases are reported to the public health service) no case of arsenical cancer among industrial workers has been encountered.

This brings out the fact that arsenical keratoses and arsenical cancers are apparently caused by ingestion of arsenic through the intestinal tract or by intravenous injection of arsenic, and not by contact of the skin with the drug.

Dr. George C. Andrews, New York: I cannot speak from experience, but I have in mind 2 patients who would disprove the remarks of Dr. Schwartz about arsenical cancer being caused only by ingestion of arsenic. I have 1 patient who has been a copper miner. He never took arsenic but got his contact presumably by inhalation. He has been under my care for about twelve years, and he has had many typical arsenical keratoses of the palms and soles and also epitheliomas which I have always thought were of arsenical origin.

I also have in mind a patient, a woman, who has been throwing sodium arsenate on flower beds as an insecticide for several years and has arsenical keratoses on her hands and face.

Dr. W. H. Goeckerman, Los Angeles: We purposely laid particular emphasis on the complications that interested us most so far as this particular patient is concerned. I am sure that there could have been more discussion if we had laid emphasis on the various phases of cutaneous lesions, but we saw no object in that, because the literature is now full of articles on this point from different countries. But when we became interested in lesions of the mucous membrane we approached the problem with the idea of searching the literature to see how many cases there were of that type, expecting that there would be a large number and at least some in which the lesions had been subjected to microchemical studies. So far as we could learn, there were very few reported, and in none had microchemical studies been done.

I think that Dr. Schwartz's remarks hold water in the main. I do not wish to pose as an expert on the toxicology of arsenic, but the literature supports his comments. One must always remember, however, that unless the individual cases are investigated it is not known whether the patients are getting arsenic by ingestion or not, because in so many places today there is contamination of the water and food.

The whole subject is exceedingly complex. As one goes through the literature, one becomes increasingly impressed with this fact.

I was glad to hear that Dr. Montgomery and Dr. Anderson also found cases in which the mucous membrane was involved. One cannot help but feel that either this complication is extremely rare or it has not been given the attention it deserves.

The thought immediately arose, as we began to work with this problem, that possibly in the cases of a fair percentage of patients without cutaneous lesions, in whom epitheliomas of the mucous membranes develop that are generally accepted as simply the ordinary type of epithelioma, arsenic may be a factor.

I think the paper should serve as a stimulant to watch patients from this particular point of view.

TREATMENT OF CHANCROID WITH SULFANILAMIDE

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Therapeutic methods in the treatment of chancroidal infections have ranged from various local measures to the parenteral administration of specific and nonspecific vaccines. Numerous authors [1] have reported favorably on the results obtained with Ducrey vaccines, and for some time the intravenous administration of the specific vaccine was considered the most efficacious procedure available. Its specificity, however, was doubted by some authorities.[2]

The introduction of sulfanilamide was followed by encouraging reports of its action in infection due to the Ducrey bacillus. In recent reports [3] the drug has been considered practically specific for this infec-

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tion. However, comparative studies are few. Observation at Bellevue Hospital of 182 cases, in 114 of which sulfanilamide was given, within the past three years has enabled us to evaluate the drug from this angle and to establish therapeutic principles for the various manifestations of the disease.

In comparing the results of various treatments of chancroidal infections, the size, location and duration of the lesions, the sex, the presence of secondary infection and the variable virulence of the causative organisms are factors to be considered. In our opinion multiplicity of the lesions has little effect on the healing process, provided severe edema of the region is not present. Sex is important in so far as vaginal secretions provide a favorable medium for bacterial growth. The location of the lesions may influence the healing. Lesions on the glans penis, anus or labia minora heal slower than cutaneous lesions. Phagedenic chancroid in the male occurs almost invariably on the glans penis. Secondary infection, virulence of strains and decreased resistance of the patient undoubtedly play a part in the phagedenic destruction of the tissue. The association of inguinal adenopathy does not seem to influence the healing of the cutaneous ulcers. Therefore, the two types of lesions will be considered separately.

The aforementioned factors, however, are too variable to serve as criteria for the classification of cases necessary in a comparative study of therapeutic results. The obvious basis for such classification is the size of the lesions. Accordingly, our cases were arbitrarily divided into three groups according to the size of the lesions: (1) Small chancroids, usually multiple, from the size of a match head to that of a dime, (2) large chancroids, usually single, varying in size from that of a dime to that of a quarter, including irregular elongated lesions of the stellar type and lesions involving the entire circumference of the sulcus, and (3) phagedenic chancroids, invariably single, the size of a quarter or larger, including the deep, destructive ulcers at times simulating carcinoma.

The diagnosis of chancroidal infection was based on the negative results of repeated dark field examinations for Spirochaeta pallida, positive results of the Ito-Reenstierna test (with no history of previous infection) and/or positive results of autoinoculation. Mixed infections with active syphilis or lymphogranuloma venereum and concealed lesions were excluded from this study.

The therapy used for the control group was that generally accepted, namely, application of compresses soaked in a 1 to 5,000 solution of potassium permanganate and of iodoform powder and intravenous injections of vaccines. The preparations used intravenously were Ducrey and typhoid vaccine. The results obtained with them were so much alike that they were classified together. We considered their action to be non-

specific. The initial dose of 0.1 cc. was increased gradually and administered every two or three days for a course of seven to eight injections. A severe reaction with fever, malaise and headache usually followed. Rest in bed for seven to ten days was routine in all cases. Patients treated with sulfanilamide received only local applications of dressings wet with saline solution.

In the majority of the cases, sulfanilamide was administered in moderate doses: seventy-five grains (5 Gm.) daily, in divided dosage three times a day, for three days and 45 grains (3 Gm.) daily thereafter. The best results were obtained with this dosage. A few patients received as much as 120 grains (8 Gm.) and others as little as 30 grains (2 Gm.). Sodium bicarbonate was always given simultaneously.

Toxic symptoms in the form of cyanosis, erythema or fever were relatively uncommon. Because of these reactions in 6 instances the administration of the drug was discontinued a few days after the beginning of the treatment. The involution of the lesions continued unhampered.

RESULTS

Chancroids.—In 93 cases the lesions were classified as small chancroids. In 64 of these sulfanilamide was administered. The average time required for cure was twelve days. The condition in the control patients necessitated an average of eleven and six-tenths days to disappear. In 4 cases local therapy failed to control the lesions, which were controlled later by another type of local treatment. This never happened with sulfanilamide.

In the second group were included 68 patients with large chancroids. Sulfanilamide was most efficacious. Thirty-eight patients receiving the drug required eighteen days for cure. In the control group, consisting of 30 patients, the lesions healed in twenty-two and seven-tenths days. In 2 cases of the sulfanilamide group and in 1 of the controls there was relapse.

Group three consisted of 17 patients with phagedenic chancroids. In the control group were 6 patients who were cured in an average of thirty-five days. In 2 cases the lesions relapsed. Eleven patients were treated with sulfanilamide. Six of these healed in a definitely shorter period, of twenty-seven and six-tenths days. However, the remaining 5 did not respond to this form of therapy, necessitating a change to iodoform powder, with resulting cure.

Inguinal Adenopathy.—The patients with inguinal adenopathies were classified in two groups: those with ruptured and those with unruptured buboes. In all the cases rest in bed was given until the acute inflammatory symptoms had subsided. Aspiration of the buboes was performed whenever required.

Of the cases complicated by buboes, in 39 the buboes had not ruptured. The desired effect was accomplished in sixteen days in 20 cases by local therapy in the form of wet dressings, ice bags, the injection of iodoform in glycerin and vaccinotherapy. Nineteen days was necessary in 19 cases in the sulfanilamide series, an evident lack of superiority of this drug in this manifestation of chancroidal infections.

Ruptured buboes were observed in only 12 patients. The 4 control patients healed in an average of fifty-one days. The remaining 8 received sulfanilamide and were cured in a definitely shorter period, twenty-one days.

Effect of Sulfanilamide on Chancroidal Autoinoculation.—Sulfanilamide has a definite action on the Ducrey bacilli. Kornblitt, Jacoby and Wishengrad [3a] failed to find bacilli in the lesions twenty-four hours after the administration of the drug. In several patients who had a positive reaction to an autoinoculation test we repeated the inoculation from two to five days after the beginning of the treatment. On every occasion the reaction was negative. The first autoinoculation healed promptly, without local applications.

CONCLUSIONS

There is no advantage in giving sulfanilamide to patients with small and uncomplicated chancroids. Local therapy seems to be sufficient. If the lesions are not controlled promptly, sulfanilamide is to be given. For large chancroids sulfanilamide associated with local therapy should be used.

In some cases of phagedenic chancroid the result of the treatment by sulfanilamide is striking; in others it is a failure. In all cases, therefore, it should be tried in conjunction with local therapy.

Rest in bed is the most important factor in the prevention of adenopathy in chancroidal infections. When adenopathy is present in the unruptured stage, rest in bed and aspiration of the bubo are of paramount importance. Sulfanilamide does not decrease the formation of pus. On the other hand, the best results with this drug are obtained in patients with ruptured buboes.

Sulfanilamide is therefore of value in the treatment of chancroidal infections. It should not be used, however, in a routine manner, but with knowledge of its value and indications.

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FAMILIAL LICHEN PLANUS

A REPORT OF FOUR CASES OF LICHEN PLANUS IN ONE FAMILY, WITH A BRIEF REVIEW OF THE LITERATURE

M. H. SAFFRON, M.D.

PASSAIC, N. J.

The inclusion of lichen planus among the familial dermatoses was apparently first suggested by Hallopeau and Leredde [1] in 1900, although several observers, including Lustgarten,[2] Brocq [3] and Ormerod,[4] had previously reported cases of the disease with a familial background. Lustgarten's original case was published in 1894.

There have been four important résumés of the subject. Jadassohn [5] in 1900 collected 12 cases from the literature, including 2 from his own practice. Three of these cases were of the conjugal variety. Galewsky [6] in 1921 reported a total of 31 cases, 26 of the consanguineous variety and 5 of the conjugal type. Spitzer's [7] comprehensive article appeared in 1924. He carefully reviewed the entire subject, adding 15 cases to the previous report, 3 of these being from his own practice. Juliusberg [8] covered familial lichen planus in the *Handbuch* in 1931 and presented the arguments for the contagious and neurogenic theories of causation. Montgomery and Culver [9] reported the second American case

From the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital.

1. Hallopeau, F. H., and Leredde, L. E.: Traité pratique de dermatologie, Paris, J. B. Baillière & fils, 1900.

2. Lustgarten, S.: Three Cases of Lichen Planus in the Same Family, J. Cutan. Dis. **12**:501, 1894.

3. Brocq, L.: Quelques considérations sur le lichen ruber planus, Rev. gén. de clin. et de thérap. **11**:209, 1897.

4. Ormerod, J. A.: Lichen Ruber Planus, Brit. J. Dermat. **12**:413, 1900.

5. Jadassohn, J.: Beiträge zur Kenntnis des Lichen, in Festschrift gewidmet Moriz Kaposi zum fünfundzwanzigjährigen Professorenjubiläum in Vererbung und Dankbarkeit von Collegen und Schülern, Vienna, W. Braumüller, 1900, p. 877.

6. Galewsky, E.: Beiträge zur Aetiologie des Lichen ruber: Familiärer Lichen ruber, Arch. f. Dermat. u. Syph. **129**:484, 1921.

7. Spitzer, R.: Ueber familiären Lichen ruber planus, Arch. f. Dermat. u. Syph. **146**:474, 1924.

8. Juliusberg, F.: Lichen ruber familiaris, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1931, vol. 7, pt. 2, p. 78

9. Montgomery, D. W., and Culver, G. D.: Lichen Planus in Two Brothers, J. Cutan. Dis. **37**:242, 1919.

in 1919, and Goodman and Sulzberger [10] reporting a case of the conjugal variety brought the literature to date, compiling a total of 57 reported cases.

The following are among the more unusual cases reported:

Brocq [3]: An acute attack of the disease which developed in a mother while treating a daughter who had lichen planus.

Joseph [11]: Hypertrophic lichen planus in three generations: mother, son and grandson.

De Azúa [12]: Unusual variety of lichen obtusus corneus in a mother and 2 children.

Little [13]: Acute lichen planus which developed in 2 sisters, living apart, six weeks after the death of their father.

Samuel [14]: The annular, atrophic variety in 2 sisters, with the lesions confined to the legs.

Bettmann [15]: Acute lichen planus in 2 brothers, not living together, characterized by glandular and splenic enlargement.

Spitzer [7]: Lichen obtusus corneus in father and daughter; miliary, psoriasiform type of lichen planus in two sisters.

Wende [16]: Typical lesions of the disease which developed in a 10 month old nursling whose mother had lichen planus.

Vonkennel [17]: Lichen planus verrucosus in a father and son.

Veiel [18]: Lichen planus which developed in the father, son and daughter of a family of 4.

Scheer [19]: Personal knowledge of 3 brothers who had lichen planus.

REPORT OF CASES

The F family consists of a father, mother, 4 sons and a daughter. None of the children have lived with the parents or with one another during the past ten years. All members of the family are well educated, sensitive and of above average intelligence.

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10. Goodman, J., and Sulzberger, M. B.: Conjugal Lichen Planus, Arch. Dermat. & Syph. **35**:1139 (June) 1937.

11. Joseph, M.: Lehrbuch der Hautkrankheiten, Leipzig, Georg Thieme, 1915, p. 115.

12. de Azúa, J.: Lichen Planus familiaris vom Typus obtusus corneus, Actas dermo-sif., 1910, no. 2; abstracted, Monatsh. f. prakt. Dermat. **51**:423, 1910.

13. Little, E. G. G.: Lichen Planus, J. Cutan. Dis. **37**:639, 1919.

14. Samuel, H. C.: Lichen Planus Annularis in Two Sisters, Brit. J. Dermat. **27**:321, 1915.

15. Bettmann, S.: Beiträge zur Kenntnis des Lichen ruber planus, Arch. f. Dermat. u. Syph. **75**:379, 1905.

16. Wende, G. W., in discussion on Dade: Lichen Planus Acutus, J. Cutan. Dis. **32**:805, 1914.

17. Vonkennel, J.: Lichen ruber verrucosus, Zentralbl. f. Haut- u. Geschlechtskr. **30**:691, 1929.

18. Veiel, F.: Lichen ruber als Familienerkrankung, Arch. f. Dermat. u. Syph. **93**:383, 1908.

19. Scheer, M., in discussion on Feit, H.: Lichen Planus in Mother and Child, Arch. Dermat. & Syph. **20**:254 (Aug.) 1929.

Acute lichen planus developed in Mrs. F. F., a housewife aged 52, in May 1921, involvement being especially pronounced on the legs and the upper part of the abdomen. Oral lesions were numerous. Pruritus was intense. The attack was gradually controlled by arsenic taken internally and subsided in October of the same year. In September 1936 she suffered a severe recurrence of lichen planus. Again the lower extremities and the abdomen were the chief sites of the eruption. Mercury salicylarsenate, (enesol), a bismuth compound and roentgen rays were used in controlling this attack, which lasted for eight months. At the last observation (1939) there were still areas of pigmentation on the legs.

R. F., a salesman aged 36, had lichen planus in 1932. The lesions were few and involved the penis, upper part of the abdomen and oral mucosa. Pruritus was slight, and the lesions disappeared, after the administration of solution of potassium arsenite U. S. P., in approximately three months.

S. F., a dentist aged 37, had lichen planus in 1936. The lesions were confined to the penis, forearms and oral mucosa. Treatment consisted of administering a bismuth compound and injections of enesol. Severe pruritus required localized roentgen ray therapy. The attack subsided about six months after the onset.

A. F., a factory manager aged 38, had an acute, widespread eruption of lichen planus in 1938. The lesions covered large portions of the body. The skin appeared edematous and inflamed. Pruritus was intense. Therapy consisted of rest, sedation and wet dressings. Later mercury salicylarsenate (enesol) was used, with success. The entire course of this attack was approximately twelve weeks, after which a few chronic lesions remained on the forearms and legs. In May 1939 he suffered a severe relapse, resembling in every respect the earlier attack. In March 1940 there were still a few pigmented spots on the upper and lower extremities and a few oral lesions.

SUMMARY

This is the first reported instance of lichen planus in 4 members of one family.

To date 60 cases of familial lichen planus have been reported in the literature, 50 of the consanguineous variety and 10 of the conjugal.

It is suggested that all patients with lichen planus should be questioned as to other cases in the family. Statistics of such a nature may assist in establishing a neurogenic cause for the disease, which the present report suggests.

Clinical Notes

MOIST PAPULES IN THE AXILLA

SYDNEY GELLIS, M.D., AND SAMUEL BLUEFARB, M.D., NEW YORK

Moist papules are most frequently found about the female genitalia, in the groins and on the apposing surfaces of the thighs. Since among hundreds of cases observed in our service the following case was the first in which lesions of this kind in the axilla were seen, we think it interesting enough to report.

REPORT OF A CASE

M. W., a white woman aged 54, was admitted to Bellevue Hospital complaining of sores around the genitalia of one month's duration. The patient was

Moist papules in the axilla.

an alcoholic addict and admitted sexual promiscuity. She had been married twice. A pregnancy, which occurred eighteen years prior to admission, terminated in a stillbirth. She stated that the Wassermann reaction was negative six years ago. On admission the patient complained of a sore throat of six weeks' duration. About two weeks after the sore throat developed she noticed "pimples on the face" and sores around the genitals. She also noticed "pimples in the left arm pit," which first appeared three weeks after the development of the sore throat.

Examination revealed injection of the fauces. No mucous patches were present. A papular eruption with induration was seen on the face, wrists and soles. There were moist papules about the anus and vulva. In the left axilla two split pea-sized smooth papules with moist surfaces were observed. The vaginal examination gave negative results. No other constitutional signs or symptoms were recorded.

From the Department of Dermatology and Syphilology, New York University College of Medicine, and the Department of Dermatology and Syphilology, Medical (N. Y. U.) Division, Bellevue Hospital, service of Dr. Edward R. Maloney.

The dark field examination of material from lesions around the vulva and from lesions in the left axilla showed spirochetes. The Wassermann reaction of the blood was 4 plus. The Frei test and the Ito-Reenstierna test gave negative results. Histologic examination of a papule in the left axilla revealed characteristic changes of syphilis.

The lesions responded rapidly to antisyphilitic treatment and became dark field negative twenty-four hours later.

SUMMARY

A case in which there were the cutaneous features of secondary syphilis and moist papules in the left axilla is reported.

RECKLINGHAUSEN'S DISEASE IN IDENTICAL TWINS

EARL L. LOFTIS, M.D., DALLAS, TEXAS

Though the familial occurrence of Recklinghausen's disease has long been established, many examples in both sexes of the same and succeeding generations of predisposed families having been reported, I have not found a report of its presence in twins.

REPORT OF CASES

Identical twins, unmarried women aged 42, consulted me about an eruption which had been present since the age of 8 years. The condition appeared simultaneously in the patients and has slowly progressed, new lesions appearing from time to time. The eruption now consists of hundreds of soft, fleshy and elevated tumors scattered over the face, neck, chest, arms and back. The tumors have about the same distribution in the twins. They vary from the size of a pinhead to that of a dime and from the color of normal skin to dark brown. Many of the tumors can be invaginated, and some are apparently cystic. No tenderness or pain is present. None have disappeared, as far as the patients know. On the forearm of one is a light brown nonelevated spot, 2 inches (5 cm.) in diameter, and on the other there is a similar spot in the lumbar region, each of which has been present since infancy. One of them has a tumor on the vocal cord, the other an increasing deafness in both ears which has been present about ten years. The intelligence of the patients is of low average. The family history is negative for similar conditions back to the second generation. The histologic picture is typical of Recklinghausen's disease.

1502 Medical Arts Building.

Submitted for publication May 20, 1940.

News and Comment

PROGRAM NOTICE

Applications for places on the program of the Section on Dermatology and Syphilology for the Annual Session of the American Medical Association at Cleveland, June 2 to 4, 1941, are now being received. All Fellows of the Association are eligible. The program is usually assembled in the early part of December. Essayists who are not Fellows of the Association may be accepted by invitation.

All applications should be addressed to Dr. C. F. Lehmann, Secretary of the Section on Dermatology and Syphilology, 705 East Houston Street, San Antonio, Texas.

PACIFIC NORTHWEST DERMATOLOGICAL SOCIETY

On Oct. 19, 1939 dermatologists from Portland, Ore., Seattle, Tacoma and Spokane, Wash., and Vancouver, British Columbia, Canada, held a meeting at Vancouver and organized the Pacific Northwest Dermatological Society. They elected Dr. Lyle B. Kingery president and Dr. John H. Labadie secretary-treasurer for the ensuing year, both being from Portland. A constitution and set of by-laws were drawn up and adopted.

It was decided that the next meeting of the society should be held in Portland, and on May 9, 1940 the second meeting of the group took place in that city. After the presentation of about 40 cases at the University of Oregon Medical School, outpatient department, a business meeting was held and was attended by 24 dermatologists from the five cities. Dr. Lyle B. Kingery was re-elected president, Dr. Richard J. Bailey, Spokane, vice president and Dr. Robert L. Howard, Spokane, secretary-treasurer for the ensuing year.

The next meeting of the society is to be held in October 1940 in Spokane.

MICROFILM COPYING

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CORRECTION

In the article by Dr. Frances Pascher entitled "Exudative Chronic Discoid and Lichenoid Dermatitis (Sulzberger and Garbe)," in the August issue (ARCH. DERMAT. & SYPH. **42**:322, 1940), in the fourth line from the end of the first paragraph on page 331, "Exsiccated sodium arsenate N. F." should have read merely "Sodium arsenate."

Abstracts from Current Literature

EDITED BY DR. HERBERT RATTNER

OCCURRENCE OF MONILIA IN NORMAL STOOLS. T. G. SCHOONER, Am. J. Trop. Med. **19**:163 (March) 1939.

Schooner studied the stools of a series of 314 normal persons by making cultures to determine the frequency of fungi in their gastrointestinal tracts. Monilia was found in 33.1 per cent of the stools cultured. As to types, Monilia albicans occurred in 16.9 per cent, Monilia parapsilosis in 6 per cent, Monilia krusei in 5.7 per cent and Monilia candida in 4 per cent. Other fungi isolated and identified were: Cryptococcus, in 28 per cent; Geotrichum, in 29 per cent; Penicillium, in 11.8 per cent, and Aspergillus, in 3.5 per cent.

BURPEE, Augusta, Ga. [AM. J. DIS. CHILD.]

IDIOPATHIC FAMILIAL LIPEMIA. L. EMMETT HOLT JR., FRANCIS X. AYLWARD and HARRY G. TIMBRES, Bull. Johns Hopkins Hosp. **64**:279 (May) 1939.

A girl, aged 11 years, had extreme lipemia due primarily to neutral fat and associated with hepatomegaly, splenomegaly, psoriasis, peculiar ulcerations of the skin and malnutrition. Periodic acute attacks of abdominal pain occurred, accompanied by a sudden reduction of fat in the blood, enlargement of the liver and spleen and engorgement of the abdominal veins. There was evidence that the disorder was familial.

The condition was not improved by lecithin, choline, thyroxin, insulin, "lipocaic" or anterior pituitary therapy. It could, however, be in large measure controlled by a diet low in fats. Some evidence was obtained of a beneficial effect of transfusion.

The various types of disturbance which may give rise to lipemia are discussed. It is suggested that the condition described is due to a defective mechanism for removal of fat from the blood by the liver, a mechanism in which a humoral factor appears to be concerned.

FROM THE AUTHOR'S SUMMARY. [AM. J. DIS. CHILD.]

THE ANTI-ACRODYNIC PROPERTIES OF CERTAIN FOODS. HOWARD A. SCHNEIDER, J. KATHERINE ASCHAM, BLANCHE R. PLATZ and H. STEENBOCK, J. Nutrition **18**:99 (July) 1939.

These Wisconsin investigators have assayed fifty-two foodstuffs for their antiacrodynic activity (antidermatic factor, vitamin B_6), using the rat as the experimental animal. Their data show that certain vegetable fats are extremely potent sources of antiacrodynic activity; fruits and vegetables are poor; meats and fish are fair and seeds, legumes and cereals are relatively rich. Yeast shows about the same potency as the cereals. Lard is actually six times as potent as yeast.

FREDEEN, Kansas City, Mo. [AM. J. DIS. CHILD.]

A CASE OF ALEUKAEMIC LYMPHOSIS INVOLVING THE UPPER LIDS WITH PATHOLOGICAL FINDINGS. F. TOOKE, Brit. J. Ophth. **23**:444 (July) 1939.

A man aged 65 was admitted to the hospital with a pendulous right lid. A tumor was presented. The skin of the lid was not discolored and was movable over the underlying tumor. The palpebral conjunctiva was thick, lusterless and pinkish gray, resembling somewhat sodden blotting paper. The upper lid of the left eye presented practically the same features. Except for a moderate degree of chemosis about the accessory lacrimal glands, the globes appeared normal.

There was a uniform adenopathy. A roentgenogram showed marked enlargement and increased density involving the roots of both lungs. This may have been due to hypertrophied glands. Biopsy of the tumors and of the posterior cervical glands gave a picture corresponding to that found on the borderline between lymphatic leukemia and a relatively mature form of lymphosarcomatosis. The author is inclined to classify the disease among the rather immature forms of lymphatic leukemia. The blood picture showed evidence of marked anemia, with a tendency for the cells to be somewhat larger than normal and to have poor regenerative ability. The white blood cells showed deficiency in the number of the myeloid elements, with some immature forms. The lymphocytes were increased; the increase appeared to be due to the presence of immature lymphoblastic cells, corresponding to those to be met with in the lymph glands.

The concluding paragraph of the article contains the following statements: "This case, therefore, is one of a systemic lymphoid proliferation, which apparently from the progressive changes in the blood picture has involved the bone marrow, spleen, and lymph glands of the patient, as well as in an unusual manner, the eyelids. The proliferation is of a comparatively active form, and falls in its intensity and character between that met with in lymphatic leukaemia and that in lymphosarcomatosis. For this reason it is best classified as a leukaemic form of lymphosis, with unusual involvement of the eyelid and with an activity of cell proliferation bordering on the lymphosarcomatoses."

ZENTMAYER, Philadelphia. [ARCH. OPHTH.]

HERPES SIMPLEX. F. M. BURNET and DORA LUSH, Lancet **1**:629 (March 18) 1939.

Herpes antibody in human serums can be titrated on the chorioallantois. With few exceptions human serums either contain no herpes antibody or are highly active against the virus. There is no relation between susceptibilty to clinical poliomyelitis and absence of herpes antibody. Herpes virus could not be demonstrated post mortem in the gasserian ganglions of persons with high titer herpes antibody. Aphthous stomatitis in infancy is the common manifestation of primary infection with herpes virus. Primary herpes is an infective disease spread by droplet infection or by salivary contamination, particularly in children aged from 1 to 3 years.

As a working hypothesis the authors adopt the view that, once maternally transmitted immunity has been lost, there is a period roughly from 9 months to perhaps 5 years of age during which the child is readily susceptible to infection of the buccal mucosa by herpes virus. Once infection has been acquired, the virus persists in certain cells throughout life and provokes its characteristic manifestation, labial herpes, when conditions are suitable.

LANGMANN, New York. [AM. J. DIS. CHILD.]

RESULTS OBTAINED IN LUPUS ERYTHEMATOSUS BY INOCULATING THE BLOOD INTO MONKEYS. L. M. PAUTRIER and R. GLASSER, Bull. Soc. franç. de dermat. et syph. **46**:1105 (Sept.-Oct.) 1939.

The authors studied 30 cases of lupus erythematosus in an attempt to prove a tuberculous causation. Four fragments of tissue from the lesions and 30 specimens of blood were inoculated into 19 monkeys in one series of experiments and into 160 animals in a second series. Autopsies were performed on the animals, and the organs were systematically examined histologically and bacteriologically. No tuberculous lesions could be demonstrated.

LAYMON, Minneapolis.

THERAPEUTIC RESULTS IN ONE HUNDRED CASES OF EPITHELIOMA OF THE LID TREATED BY IRRADIATION AT THE RADIUM INSTITUTE OF PARIS BETWEEN 1935 AND 1937. M. A. DOLLFUS, Bull. Soc. d'opht. de Paris **51**:27 (Jan.) 1939.

Of 100 patients with epithelioma of the lid, 38 were treated in 1935, 32 in 1936 and 30 in 1937. Thirty-six growths were located at the internal canthus, 26 at the

interior of the lid, 13 contiguous with the nose, 9 under the orbit, 8 above the orbit and in the region of the eyebrow, 3 on the upper lid, 3 at the corneal limbus, 2 at the external angle and 1 in the orbital cavity. Fifty-seven of the patients were women and 43 men. Radium was used in 96 cases, roentgen rays with radium in 3 cases and teleradium therapy in 1 case, for an enormous epithelioma of the orbit. The technic is explained in full, and the methods used to guard against injury to the eye from the rays are detailed. Eighty-eight patients were considered cured. Complications existing in the eye or its adnexa did not entitle 10 of the patients to be registered as cured. Extension of the initial lesion in 2 patients could not be halted. With proper care and protection of the eyeball, irradiation is preferred to operation because of less chance of ugly scar formation.

MAYER, Chicago. [ARCH. OPHTH.]

SYPHILITIC CHANCRE ACQUIRED BY A NEWBORN INFANT DURING DELIVERY. G. NASTASE, Bull. Soc. de pédiat. de Iasi **9**:40, 1938.

A chancre developed on the scalp of an infant during the third week of extrauterine life. Secondary lesions of the skin and mucous membranes were present when the child was 2 months of age. The mother was suffering from secondary lesions at the same time; she stated that these had been present for thirty days. The mother had been infected during the eighth month of pregnancy. The placenta must have been an effective barrier to the transmission of infection during intrauterine life.

LESLIE, Evanston, Ill. [AM. J. DIS. CHILD.]

PHOTOSENSITIZATION AND MELANODERMIA CAUSED BY MERCUROCHROME. MARCIAL I. QUIROGA, Rev. méd. latino-am. **24**:472 (Feb.) 1939.

A young woman received daily intravenous injections of mercurochrome for six consecutive days. The first dose was 2 cc., the daily dose being increased by 0.5 cc., so that the final amount was 4.5 cc. The injection was given about noon daily, and shortly thereafter the patient would expose herself to the sun for one to one and one-half hours. After the third injection an eruption appeared on the legs, hands, forearms and face. In addition there was considerable swelling of both cheeks. There was stomatitis, the buccal mucosa being reddened, and there was profuse salivation. The eruption lasted about two weeks, and when it disappeared, there remained a brownish pigmentation which has persisted with gradual improvement for two months.

The author states the belief that the condition was caused by the photosensitizing action of the dibromofluorescein contained in the mercurochrome on the epidermal cells.

LEIFER, New York.

EVALUATIONS OF VITAMINS A, B_1 AND C AS THERAPEUTIC AGENTS. S. KUTHAN, Wien. klin. Wchnschr. **25**:597 (June 23) 1939.

If investigators wish to evaluate the therapeutic effectiveness of vitamins A, B_1 and C, they cannot help but be disappointed occasionally if the use of these vitamins is not strictly confined to conditions for which they are specific, according to Stephen Kuthan. With the use of vitamin C, he obtained fairly good results in treating hemorrhagic stomatitis and gingivitis accompanying various diseases. He also obtained favorable results in treating hemorrhagic diathesis in certain cases. He states that other therapeutic indications for this vitamin are questionable.

He obtained good results by using vitamin B_1 in cases of alcoholic neuritis and in neuritis accompanying gastrointestinal disturbances, but in treating other conditions the results with vitamin B_1 were questionable.

Vitamin A proved most valuable in those conditions in which a disturbance in the mucosal epithelium was evident.

He states that he does not wish to minimize the therapeutic value of these vitamins, and he also points out that to the aforementioned specific conditions one

must add the various latent hypovitaminoses. In other words, a deficiency in the intake of the aforementioned vitamins, although not giving rise to clinical manifestations of disease, may play a part in the production of certain disease conditions. The question of resistance to avitaminosis as produced by Georges and Mouriquant has not yet been fully investigated. He emphasizes the fact that in certain conditions therapy with vitamins A, B_1 and C must be augmented by other indicated therapeutic agents.

ABT, Chicago. [AM. J. DIS. CHILD.]

TWO CASES OF OSTEOPERIOSTOPATHIA HYPERTROPHIANS SECUNDARIA ASSOCIATED WITH PERNIONES. ATUSI NAKAZYO, Jap. J. Dermat. & Urol. **45**:25 (Feb.) 1939.

The author reports the condition of osteoperiostopathia hypertrophians secundaria (described in 1890 by Pierre Marie) in a brother and a sister whose parents were blood relatives. Both children had a compensated congenital cardiac defect and thickening of the distal ends of the body, like the nose, ears, chin and particularly the ends of the fingers and toes. There was also thickening of the periosteum of the long bones. These areas showed also perniones, which could readily be produced artificially. The author considers all these changes as secondary changes due to the heart defect, which caused stasis in the capillaries and proliferation of the soft parts and bones. The production of the perniones is explained in the same way.

DIETETIC TREATMENT OF PSORIASIS VULGARIS. K. TAKENOUTI, Jap. J. Dermat. & Urol. **45**:32 (Feb.) 1939.

The author has treated 3 patients with psoriasis vulgaris successfully with the diet of Grütz, which contained 60 Gm. of protein, 4 to 6 Gm. of fat and 400 Gm. of carbohydrates, amounting to about 2,000 calories. The remaining few obstinate lesions had to be treated locally or by administration of a gold compound.

In all 3 cases histochemical examination revealed a moderate deposition of fat and lipoid substance in the epidermis and cutis. Serum cholesterol showed a typical psoriasis curve when the Belastung test of Bürger was used. The serum cholesterol figures rose parallel with the exacerbation of the eruption.

CLINICAL OBSERVATIONS OF THE PRIMARY LESION IN LYMPHOGRANULOMA VENEREUM. T. ITIKAWA and R. SHINODA, Jap. J. Dermat. & Urol. **45**:79 (April) 1939.

The authors found a primary lesion in 36 per cent of the cases of lymphogranuloma venereum. They have observed different forms of primary lesions: (1) the herpetic lesions, (2) the papular and the ulceropapular, (3) the nodular and the ulceronodular and (4) urethritis. The lesion may be solitary, or two to three lesions may be present. Different forms of primary lesions may be seen in the same person. The fact that the primary lesion heals rapidly explains why in two thirds of the cases it is not observed. The rapid healing of the herpetic lesion or its change into the papular or nodular form accounts for the fact that these forms of primary lesion are seen more frequently than the herpetic form. Only a small percentage of primary lesions appear from the start as papules or nodules.

CONTRIBUTION TO THE KNOWLEDGE OF "CHRONIC POLYMORPHOUS ERUPTIONS DUE TO LIGHT." S. OHMORI, Jap. J. Dermat. & Urol. **45**:81 (April) 1939.

The author reports the case of a man aged 25 who suffered a recurrent papulovesicular eruption on the face, neck and hands after exposure to the sun. Investigation revealed that the patient's skin was sensitive to the visible light rays, particularly to the green part of the sunlight. Dysfunction of the liver was proved not only indirectly, by the finding of urobilin and urobilinogen and an excess of coproporphyrin in the urine, but also directly by liver function tests. There was

hypersensitivity of the vegetative nervous system to pilocarpine. The author succeeded in diminishing the photosensitivity of the skin in the patient by means of intravenous administration of a 10 per cent solution of sodium thiosulfate together with large doses of a liver preparation (yakriton).

THE INFLUENCE OF DERMATITIS SERUM ON ANTIBODY FORMATION. I. MIYAKE and K. YOSHIOKA, Jap. J. Dermat. & Urol. **45**:101 (May) 1939.

Animal experiments revealed that antibody formation stimulated by injection of egg albumin is greatly increased when blood serum from rabbits with dermatitis is added to the egg albumin. The serum taken on the fifth day of the dermatitis proved to be moderately active; that on the fourteenth day, intensely active, and that on the nineteenth day did not enhance any antibody formation at all. These observations lead to the conclusion that the serum of rabbits with dermatitis contains a substance which stimulates the formation of antibodies.

THE PRIMARY LESION OF LYMPHOGRANULOMA VENEREUM: SECOND REPORT. R. SHINODA, Jap. J. Dermat. & Urol. **45**:103 (May) 1939.

Histologic examination of different forms of primary lesions of lymphogranuloma venereum revealed nonspecific exudative and proliferative changes in the herpetic form, lymphoma and proliferation of reticuloendothelial cells in the papular-ulcerative form and microabscesses in the nodular-ulcerative form. Material from 30 primary lesions of 32 was successfully inoculated into the brains of mice. A Frei antigen could be prepared from 5 primary lesions, although it was less effective than the usual Frei antigen prepared from the pus of the inguinal bubo. However, the nodular primary lesion gave as effective an antigen as that of the bubo. When pus of the bubo was injected into the skin of control patients, a primary lesion was produced, which healed in most instances after eight days. In 4 cases the infiltration persisted for fourteen days, and in 1 case it persisted for four weeks and changed into an ulcer which resembled the nodular-ulcerative form of primary lesion. Only in 2 cases of 22 was there associated lymphadenitis, although the Frei test gave a positive reaction in all 22 cases. This observation shows that there may be infection with lymphogranuloma venereum without concomitant bubo formation.

BLOOM, New York.

STUDIES ON SECRETION OF SWEAT IN THE NEWBORN. SHIGESHI UCHINO, Jap. J. Obst. & Gynec. **22**:9 (Jan.) 1939.

Twenty-eight of 57 full term infants first showed evidence of secretion of sweat from two to eighteen days after birth. In 15 per cent of the 28 secretion occurred between the third and the fifth day. In 4 infants born between the thirty-fourth and the thirty-seventh week of pregnancy sweat first appeared from thirteen to twenty-four days after birth. One showed no evidence of secretion thirty-three days after birth.

Pilocarpine injected into the skin of infants born as early as the twenty-eighth week of gestation gives local secretion of sweat. Absence of the secretion after birth is due to immaturity of the center controlling secretion and not to inability of the glands to secrete.

ADAIR and POTTER, Chicago. [AM. J. DIS. CHILD.]

CLINICAL INVESTIGATION OF ARSPHENAMINE EXANTHEMS: I. STATISTICAL INVESTIGATION OF ARSPHENAMINE EXANTHEMS. K. AKIYAMA, Lues: Bull. Soc. japon. de syph. **17**:173 (Dec.) 1938.

The author has observed, from 1921 to 1937, 108 cases of arsphenamine eruption, excluding melanosis and fixed eruption. Most frequently the eruption appeared after the second injection, less frequently after the first and third and still less frequently after the sixth to the tenth injection. The most frequent types

of eruption are erythema, eczema and erythroderma. Only 25 per cent of the patients with early erythema tolerated further treatment with arsphenamine. Twenty-five per cent of them had recurrence with each further injection, and 50 per cent reacted to further treatment with severe dermatitis. Early erythema may sometimes change to papular or vesicular eczematous eruption when further arsphenamine administration is continued. The eczematous form may sometimes appear early, but usually it appears late. To the atypical erythemas belong eruptions resembling pityriasis rosea, lichen planus, lupus erythematosus and less often erythema nodosum. The severe form of arsphenamine dermatitis appears as exfoliative erythroderma and rarely as a vesicular or hemorrhagic eruption. "Late dermatitis," which develops two to three months after arsphenamine has been administered, has not been observed by the author. To the late reactions belongs also the disseminated hyperkeratotic eruption which may resemble Darier's disease. Arsphenamine melanosis and so-called arsphenamine ichthyosis are mostly results of a usual arsphenamine dermatitis. They are extremely obstinate to treatment but may respond to the administration of ascorbic acid.

IMMUNOLOGIC INVESTIGATIONS, PARTICULARLY OF THE LYSIN, IN THE CEREBROSPINAL FLUID OF TABETIC PATIENTS INFECTED WITH RELAPSING FEVER. T. YAMASHITA, Lues: Bull. Soc. japon. de syph. **18**:19 (Feb.) 1939.

Animal experiments reveal that a lysin which has a damaging effect on Spirochaeta pallida is present in the cerebrospinal fluid of patients with tabes who have been infected with relapsing fever. This lysin substance is, however, much weaker than that found in the serum of these patients.

ON THE ERYTHROCYTE SEDIMENTATION RATE AND THE CHOLESTEROL CONTENTS OF THE BLOOD SERUM IN YAWS. K. NAGASAKI, Lues: Bull. Soc. japon. de syph. **18**:31 (Feb.) 1939.

Investigation of healthy persons and those affected with yaws on the island of Ponape revealed the following facts: The average erythrocyte sedimentation rate in persons affected with yaws was accelerated in the second stage of the disease and more so in the third. In the course of arsphenamine administration the sedimentation rate diminished. The average cholesterol content in the blood serum in persons with yaws was only slightly higher compared with that of normal people. When it was high it diminished gradually during treatment with arsphenamine. There was no connection between the cholesterol value and the serologic reaction or the rate of sedimentation.

BLOOM, New York.

PRIMARY TUBERCULOUS INFECTION OF THE SKIN. N. DANBOLT, Norsk mag. f. lægevidensk. **99**:44 (June) 1938.

The patient, a girl aged 12 years, suffered a traumatic lesion of the left elbow, and two weeks later the lymphatic glands of the axilla swelled. The lesions did not heal. Five weeks after the trauma erythema nodosum appeared. Pirquet's reaction was present. There was fever for some weeks. The ulceration healed eventually, but at the site lupus developed. This was extirpated at the dermatologic clinic. Histologic examination showed tuberculosis.

Society Transactions

NEW YORK ACADEMY OF MEDICINE, SECTION OF DERMATOLOGY AND SYPHILIS

E. William Abramowitz, M.D., *Chairman*

Lewis B. Robinson, M.D., *Secretary*

Feb. 14, 1940

Symposium on Syphilis

Acute Hemorrhagic Encephalitis Due to Neoarsphenamine, with Recovery.
Presented by Dr. Nathan Sobel.

M. R., a man aged 28, a clerk, is presented for Dr. Nathan Pensky, to whom he was referred on Oct. 1, 1939, because of a 4 plus Wassermann reaction. He stated that he had never had a venereal disease but gave a history of a quiescent duodenal ulcer. Physical examination at that time showed that the right pupil was slightly unequal and reacted sluggishly to light. Otherwise, the central nervous system and the heart were normal. The Wassermann reaction of the blood was 4 plus on three successive examinations. At that time the patient refused to allow a lumbar puncture.

Therapy was instituted with bismuth in oil in doses of 2 cc. once a week for five weeks. This was well tolerated. In the sixth week 0.3 Gm. of neoarsphenamine was administered. One week later 0.45 Gm. of the same preparation was given, without any immediate reaction. The next morning, however, the patient had chills, headache, dizziness and weakness and remained home from work. On the following day he felt better and went to work but returned home not feeling well. On the third morning he arose and began to dress but felt peculiar. He stared into space for a short time and then had a convulsion, followed by vomiting of material the color of coffee grounds. The patient was then admitted to Beth Israel Hospital, with the diagnosis of acute hemorrhagic encephalitis.

Examination on admission to the hospital showed absence of all the deep reflexes of the lower extremities and diminution of the deep reflexes of the upper extremities. The pupillary findings were the same as previously mentioned. The patient was comatose and assumed a fetal-like position. No meningeal signs were noted. The blood pressure was 100 systolic and 70 diastolic. The temperature was 99 F. and the pulse rate 110 per minute.

Lumbar puncture showed a slight increase in pressure. The fluid was clear and contained 16 cells per cubic millimeter, of which 14 were lymphocytes and 2 were polymorphonuclear leukocytes. Total protein amounted to 77 mg. and dextrose to 40 mg. per hundred cubic centimeters. Urinalysis showed a 2 plus reaction for albumin, a trace of acetone, granular casts and 1 to 2 red blood cells per high power field. A blood count showed 26,000 leukocytes per cubic millimeter, with a differential count of 90 per cent polymorphonuclear leukocytes and 10 per cent monocytes; the hemoglobin amounted to 104 per cent. The bleeding time and coagulation time were normal. Chemical examination of the blood showed 166 mg. of sugar and 36 mg. of nonprotein nitrogen per hundred cubic centimeters. The analysis of the vomitus showed a 4 plus reaction to a benzidine test.

The patient was given 1 cc. of solution of epinephrine hydrochloride every three hours intramuscularly, hypertonic solution of dextrose intravenously and clyses. On the night of admission the temperature rose to 104 F. On the follow-

ing day it returned to normal. On the third day the patient emerged from his stupor and was able to recognize his wife. At that time there was diminution of the reflexes of the lower extremities with the exception of the left achilles reflex, which was absent. The right patellar reflex was weaker than the left one. For the following seven days the patient complained of headaches and dizziness, after which he became symptom free. The urine became normal. The blood showed a persistent eosinophilia, with 7 to 10 per cent eosinophils. Roentgenograms of the gastrointestinal tract showed a duodenal ulcer. Lumbar puncture was repeated and showed 1 cell (polymorphonuclear leukocyte) per cubic millimeter and 30 mg. of dextrose and 700 mg. of chlorides per hundred cubic centimeters. The Wassermann reaction was positive down to 0.2 cc., and the colloidal gold curve read 1233100000. At this time chemical examination of the blood showed 82 mg. of dextrose and 33 mg. of nonprotein nitrogen per hundred cubic centimeters.

The patient was discharged from the hospital on December 28. On Feb. 7, 1940 all the reflexes were normal with the exception of the achilles reflex.

DISCUSSION

DR. LOUIS CHARGIN: Fortunately this complication is rare; yet I have encountered 6 cases, and I do not think that the prognosis is necessarily bad. Several years ago the subject was fully discussed by Glaser, Immerman and Immerman (*Am. J. M. Sc.* **189**:64 [Jan.] 1935). The reports they collected from the literature showed a mortality rate of 76 per cent. In the cases that I have observed the mortality rate was only 50 per cent. If the process is severe, with the cord or meninges affected, and if the patient fails to show improvement by the fourth day, the prognosis is usually bad. On the other hand, if improvement appears by the third day, the outlook is good, and recovery when it occurs is complete. The case presented this evening is an example of this. I do not know what causes this complication, but I do not know that this condition does not occur following the first injection but as a rule follows the second injection and may follow subsequent injections. There seems to be no way of determining the sensitivity beforehand. Two signs that appear early stand out and should be watched for in all patients receiving trivalent arsenicals. The first one is convulsions, and the second, a change in mentality which manifests itself by a state of confusion. As soon as either sign appears, treatment should be instituted at once. Treatment consists of repeated lumbar punctures and dehydration by the intravenous injection of a 50 per cent solution of dextrose.

DR. A. BENSON CANNON: I agree with Dr. Chargin, and I should like to add that of the 4 patients that I have had in private practice all have recovered after rest in bed and daily drainage of spinal fluid. I recall a most interesting patient, a man 72 years old, in whom acute hemorrhagic encephalitis developed after his second injection of neoarsphenamine. He was maniacal, difficult to restrain and so ill that the neurologic consultant predicted death within a few hours. The Kernig sign, ankle clonus and Babinski signs were present on both sides, and he had strabismus, inequality of the abdominal reflexes and incontinence. On the fourth day the man regained consciousness, and on the fifth day he went to Atlantic City, N. J., to recuperate. The other 3 patients were treated in the same way, and each in turn recovered in from four to seven days and later received alternate courses of arsphenamine and a heavy metal, without reactions. In 1 of these patients a second infection developed several years later, which was again cured with arsphenamine and a heavy metal. While encephalitis is undoubtedly a serious complication, probably being the result of an anaphylactic reaction to the arsphenamine, I do not believe that the condition is as serious as most physicians lead one to suspect, provided the patient is promptly hospitalized and repeated drainages of spinal fluid are performed. In all 4 of my cases the fluid was under considerable pressure.

DR. FRANK E. CROSS (by invitation): I know of a young man with early syphilis in whom acute hemorrhagic encephalitis developed after his second injection of neoarsphenamine and who made a complete recovery.

DR. LEO SPIEGEL: Why is this condition called hemorrhagic encephalitis? Why not call it encephalitis? It either is an anaphylactic reaction or is due to some toxemia. The results of examination of the spinal fluid do not show any xanthochromia or any red blood cells. May I ask the presenter to discuss this question?

DR. E. WILLIAM ABRAMOWITZ: I understand exception has been made to the use of the term encephalitis in this condition. It is more of a purpura affecting the cerebral vessels.

DR. NATHAN PENSKY (by invitation): This patient was presented because of his recent recovery from an acute involvement of the central nervous system following arsenical therapy and because of the problem of future management. There are several points in this case of acute hemorrhagic encephalitis that I feel are of importance. The patient had no meningeal signs, but damage to the nervous system was evident. The spinal fluid pressure was increased; the blood sugar was elevated (166 mg. per hundred cubic centimeters), owing to irritation of the brain centers; a fetal-like attitude was assumed by the patient during his period of unconsciousness, and there were changes in his reflexes. The prognosis in these cases depends on the severity and type of involvement. Patients who show only encephalitic involvement have a better prognosis than those with a myelitic or encephalomyelitic picture, who have practically 100 per cent mortality rate. Though the outstanding feature of this syndrome is the involvement of the central nervous system, it must not be forgotten that the condition is a systemic one. There are pathologic changes found in many organs of the body, including the liver, spleen and, particularly, the kidney. In my case the urine showed a 2 plus reaction for albumin and many red blood cells, which subsequently disappeared.

Dr. Spiegel asked whether the name hemorrhagic encephalitis is a proper one. The name is a misnomer, and many descriptive terms have been used, none of them being entirely satisfactory.

DR. E. WILLIAM ABRAMOWITZ: What is the bearing of the duodenal ulcer in connection with the development of this syndrome?

DR. NATHAN PENSKY (by invitation): Fever therapy was considered as a possible future procedure in treating the syphilis of the central nervous system in this patient. In view of the duodenal ulcer, which was activated during his illness, and the severe insult to his system, however, I doubt whether fever therapy should be considered at all.

DR. E. WILLIAM ABRAMOWITZ: Was the blood taken for the examination for sugar before or after the epinephrine was given?

DR. NATHAN PENSKY (by invitation): I am not positive but I believe that the blood was taken for the first determination before therapy was instituted.

Bilateral Paralysis of the Abducens Nerve Following Lumbar Puncture. Presented by DR. LEO SPIEGEL.

M. P., an Italian aged 36, is presented from Bellevue Hospital. He gives a history of having had a sore on the penis in 1922. He began receiving antisyphilitic treatment in 1929, when he had twelve intramuscular and six intravenous injections. He continued treatment again in 1932, off and on. During the past six months he has received only injections of mercury, his last treatment being two months before the lumbar puncture, which was performed at the West Side social hygiene clinic of the department of health on Jan. 9, 1940. The Wassermann reaction of the blood has always been positive.

About ten hours after the lumbar puncture, occipital headache developed, which persisted up to the time of the patient's admission to Bellevue Hospital on January 22. He vomited three days after the lumbar puncture but had no fever. On January 17 he reported back to the west side social hygiene clinic of the department of health, complaining of double vision. A diagnosis was made of paralysis of the left sixth cranial (abducens) nerve.

Examination on admission to Bellevue Hospital showed the pupils to be equal and regular, reacting to light and in accommodation. The patient was unable to move either eye in a lateral direction. The fundi were normal. There was slight weakness of the right side of the face. Neurologic examination otherwise gave normal results.

Lumbar puncture in July 1937 showed a 1 plus reaction for globulin, a 1 plus Wassermann reaction and a normal colloidal gold curve. The cell count was not recorded. Lumbar puncture on Jan. 9, 1940 showed a 1 plus reaction for globulin, a 2 plus Wassermann reaction and a normal colloidal gold curve, but the cell count was not recorded. Cisternal puncture on January 23 showed a normal colloidal gold curve, no cells, a negative Pandy reaction and the following Wassermann reactions: with 1 cc. of serum, 4 plus; with 0.5 cc., 4 plus, and with 0.1 cc., plus-minus. The Wassermann reaction of the blood on January 23 was plus-minus with cholesterol antigen and negative with alcoholic antigen.

Treatment has consisted of injections of lipobismol, twice a week. The patient has had two injections to date. Since admission to the hospital the paralysis of the right abducens nerve has improved considerably.

DISCUSSION

DR. LEO SPIEGEL: This case is most unusual. One sees paralysis of the sixth nerve on one side but rarely bilateral paralysis. The sixth nerve is more frequently injured than other cranial nerves because of its long intracranial course and also because it is exposed and unprotected owing to probable anatomic anomalies. In fracture of the base of the skull this nerve is frequently involved. Paralysis often takes place when the intracranial pressure is altered, as after lumbar puncture. This is given as one of the major causes of paralysis of the sixth nerve. Some observers are unable to attribute it to a definite cause; others believe it is of toxic origin and that in cases of cerebrospinal syphilis it is inadvisable to use lumbar anesthesia, as it predisposes to paralysis of the sixth nerve. In most of the cases reported the condition has followed spinal anesthesia. In this patient the pupils react both to light and in accommodation. This is unusual, as frequently there is a contraction of the pupil because some of the sympathetic fibers to the radiating muscle of the iris pass along this nerve.

DR. A. BENSON CANNON: Was any local anesthetic used in doing the lumbar puncture?

DR. LEO SPIEGEL: I do not know whether a local anesthetic was used or not.

DR. E. WILLIAM ABRAMOWITZ: Was the facial nerve involved too? The history mentions some facial weakness.

DR. ALFRED KESTENBAUM (by invitation): Paresis of the abducens nerve following lumbar puncture is a definite syndrome and is well known. Curiously, it is found almost only in the Italian literature. In the German and the English literature one finds few cases of this sort. The reason for this, I believe, is more a matter of attention paid to this syndrome than the fact that the syndrome is found especially in Italian patients. (The patient presented here is an Italian.) Five to fourteen days after the lumbar puncture there is a sudden appearance of paresis of the abducens nerve. It is mostly unilateral. I found in the literature only 1 case of bilaterality. The presented case would be the second one. All the cases have a good prognosis. In most of the cases the condition occurs after lumbar anesthesia, but in some it is also found after lumbar puncture without anesthesia. I have encountered about 7 cases of this syndrome. There were different causes: In 1 case it occurred after anesthesia in a gynecologic case; in another it followed childbirth; in another it followed surgical treatment, and in at least 2 or 3 it followed lumbar puncture without anesthesia in the treatment of neurologic disease. The frequency of the syndrome is small. In about 20,000 neurologic cases in which I had to give ophthalmologic examinations I noted only 7 cases of this syndrome. That is not even 1 out of 2,000. In the literature are found reports of paresis of the abducens nerve in 1 out of 200 or 300 cases of lumbar puncture, but I think the incidence is exaggerated.

The cause of this syndrome is not clear. That it is toxic cannot be true, because there have been cases in which anesthesia was not used and because the syndrome does not occur until five to fourteen days after the lumbar puncture. The latter fact is also against the theory of hemorrhage as a cause. The explanation that the paresis of the abducens nerve is due to the original disease, as in this case to syphilis, and that the lumbar puncture only precipitates it is not sufficient, because this syndrome has been found in non-neurologic cases too. In the literature there are still other explanations. Some of these are hypertension in the brain which develops after lumbar puncture, serous meningitis and neuritis of the sixth nerve, but the real cause, the certain cause, of this paresis is not known.

The case presented tonight has two special features. First, the condition is bilateral; secondly, the paralysis was almost complete. That means the motility was almost entirely gone. In the other cases there was mainly moderate paresis only, not complete paralysis.

Dr. A. Benson Cannon: I am inclined to agree with the neurologist, that this patient's paralysis of the sixth nerve is independent of the lumbar puncture and due either to syphilis or to a local anesthetic. In the many thousands of lumbar punctures that I have performed in the last twenty-five years, I cannot recall having had a serious complication. I consider lumbar puncture the most fool-proof method of obtaining spinal fluid. Dr. Verne told me that he had performed 36,000 lumbar punctures on ambulatory patients in clinics in France, without a single accident.

A number of years ago, when I was injecting procaine hydrochloride into the skin and subcutaneous parts of a patient preparatory to performing a lumbar puncture, I noticed the patient breathing with difficulty; repeated convulsions followed for the next twenty-four hours. Had I performed the lumbar puncture, that would have been suspected as the cause of the convulsions. The patient had paralysis of the sixth nerve and partial paralysis of the eighth nerve. The lumbar puncture was finally done a week later, without trouble.

Dr. Bernhard Dattner (by invitation): I should like to stress the point that this condition cannot be explained by only one cause. It is generally known that there are many cases in which severe headaches and nausea, often lasting for fourteen days, develop after simple lumbar puncture. The second point is that paralysis of the abducens nerve is common with different conditions. It occurs with diabetes, with increased intracranial pressure, with infections of different kinds, with trauma to the head, with leukemia and with syphilis. It is therefore not surprising that it may be caused once in a while by syphilitic involvement of the central nervous system. The point is, however, that the syndrome is seen much more often following spinal anesthesia than following simple lumbar puncture, and this proves that a toxic factor may play a role in the involvement of this nerve. It is known that when a lumbar puncture is performed the headache is not so severe if the patient is kept in the horizontal position and that it is worse if the patient gets up and walks around. That shows that the hydrodynamic factor plays a role. When all these facts are put together, there is a final point in the anatomic structure mentioned by Dr. Spiegel. The abducens nerve passes through a canal, described in 1906 by Dorello; it is a very small canal, narrow and short. It may happen that in these cases in which paralysis of this nerve occurs a structural anomaly of this canal is concerned. It could explain the fact that in the Italian literature more reports of this syndrome are found. A racial anomaly in the skull may be the cause.

As to the cause in this case, I doubt that syphilis has anything to do with the involvement of the sixth nerve. The patient was well when he went to have the lumbar puncture. He had practically normal spinal fluid, if the Wassermann reaction, which was not strongly positive, is disregarded. The last examination of spinal fluid (cisternal puncture) following the reaction showed it to be normal. There were no cells in the spinal fluid. If this condition were syphilitic meningitis, one would expect to find at least some cells. Therefore, I should say that the

patient perhaps had some constitutional predilection for this condition. It may be that his skull is primarily responsible for the bilateral involvement of both nerves. May I add that the unilateral involvement most often reported may be explained, perhaps, by the fact that the skull is not symmetric, just as the face is also not symmetric? Another point is that this man is very sensitive. After the first lumbar puncture he was sick for four days. That this sensitivity plays a role is proved by the fact that he became sick about ten hours after the puncture and was continuously sick until the bilateral paralysis of the abducens nerve developed. He vomited on the third day, and the paralysis occurred on the seventh day; so the sickness undoubtedly had something to do with the lumbar puncture. There is also the possibility, which has been mentioned by French authors, of a virus infection superimposed on mechanical irritation. In 1937 a case of this kind was cited (Barraux, A., and Bordes, L. A.: *Rev. d'oto-neuro-opht.* **15**:58, 1937).

DR. LEO SPIEGEL: In answer to Dr. Abramowitz, the facial weakness was doubtful.

Lichen-Planus-Like Recurrent Syphiloderm with Severe Itching. Presented by DR. NATHAN SOBEL.

V. H., a Negress aged 32, is presented from the central Harlem social hygiene clinic of the department of health. In October 1937 the patient had an eruption on the face. The Wassermann reaction of the blood was found to be 4 plus at that time. She was treated at the clinic from November 1937 to June 1939 and received about thirty injections of an arsenical compound and forty injections of a bismuth compound. After the third injection of neoarsphenamine, she states, an eruption appeared on the left elbow and on the right knee. This resisted treatment but eventually cleared up completely, with the exception of a small pea-sized lesion on the right knee. During 1939 the patient received about ten injections of an arsenical compound and five injections of a bismuth compound from June to August, given by her private physician. She also received local treatment with ultraviolet radiation. She had no treatment from the end of August until Jan. 16, 1940. In October 1939 the Wassermann reaction of the blood was negative. About September 1939 the persisting pea-sized area on the right knee began to enlarge, and it has reached its present size since November. The patient complained of severe itching, and she applied petrolatum with phenol and acetylsalicylic acid.

When the patient was seen on Jan. 16, 1940, she presented a palm-sized plaque on the outer side of the right knee, which was serpiginous in outline, with numerous discrete bluish red nodules the size of a large pea. Extensive pigmentation and accentuation of cutaneous markings were noted within the border. Several discrete nodules were seen outside of the border. There was a similar area the size of a quarter on the left knee. One nodule the size of a large pea was noted on the right arm.

The histologic diagnosis, from a section taken at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital, was reported by Dr. David L. Satenstein as secondary syphilis. The Wassermann reaction of the blood on January 24 was 4 plus.

Since January 16 the patient has received five injections of a bismuth compound, with substantial improvement in the cutaneous lesions.

DISCUSSION

DR. NATHAN SOBEL: I want to point out that when this patient was first seen, about six weeks ago, some of the physicians thought these lesions were lichen planus, even though they were a little larger than the usual lichen planus papules. They were flat and had more of the color of lichen planus at that time than they have now. The serpinginous border of the area favored the diagnosis of syphiloderm

DR. LOUIS CHARGIN: This condition appears to be late secondary syphiloderm in a patient who was inadequately treated. The unilaterality, the more or less segmented outline of the eruption and the fact that the beginning lesion is evidently a papule are in favor of a diagnosis of syphilis. This is also supported by the positive Wassermann reaction and by the good response to antisyphilitic therapy. Itching is not especially rare in syphilis of Negroes and especially when local medication has been used, as in this case. The syphilis is not of the follicular type.

DR. NATHAN SOBEL: The interesting feature in this case is the itching. Usually in differential diagnosis if there is a history of itching, syphilis is apt to be excluded, but occasionally, as Dr. Chargin has pointed out, there is a definite history of severe itching. This itching occurred before the patient applied any local treatment. She still has a great deal of itching. There is also one area of involvement on the left knee and another on the right arm. As far as the question of treatment is concerned, she was definitely resistant to treatment, because it took more than one year of treatment to clear up the original cutaneous lesions, one papule remaining on the right knee. Then the lesions began to enlarge again, and she is beginning now to respond again to therapy. One lesion lasted from the time she was previously treated and is only now beginning to heal. This case illustrates the facts that some syphilitic patients require more treatment and a longer course of treatment than are usually advised.

Arsenical Dermatitis. Monorecidive, Followed by Arsenical Dermatitis. Syphilitic Onychia Due to Arsenic? Presented by DR. LEO SPIEGEL.

M. R., an unmarried man aged 46, a sewing machine operator, came under observation and treatment for acute syphilis on Jan. 5, 1935. The Wassermann reaction of the blood was 3 plus with alcoholic antigen and 4 plus with cholesterolized antigen. The slide flocculation test of Kline also gave a 4 plus reaction with both diagnostic and exclusion antigens. He received twelve intravenous injections of silver arsphenamine, totaling 2.3 Gm., at five day intervals from January 7 to February 11. After the last injection arsenical dermatitis developed. He refused hospitalization at the beginning of his illness but finally consented, and he was admitted to Bellevue Hospital on March 1 and was discharged on March 15. The Wassermann reaction of the blood on February 27 was negative with both alcoholic and cholesterolized antigens, and the slide flocculation test of Kline gave a 2 plus reaction with both diagnostic and exclusion antigens.

The patient disappeared from observation and was not seen again until Oct. 2, 1939. He requested treatment for a vesicular dermatitis of the hands. The Wassermann reaction of the blood on the day of his return was negative with both alcoholic and cholesterolized antigens; the slide flocculation test of Kline gave a 2 plus reaction with both diagnostic and exclusion antigens. The examination of the spinal fluid showed that it was normal in all factors.

Since his treatment for syphilis had been inadequate, a course of intramuscular injections of a bismuth compound was advised. He received his first injection on October 2 but failed to report for his second injection until October 19. Subsequent injections were given on November 2, 9 and 16. After the injection of November 16, he failed to report for his treatment until December 5. He then complained of a penile sore, which had been present for about two or three weeks, and stated that he had had sexual intercourse a number of times during the past two months. There was no palpable inguinal adenopathy. The sore was on the shaft of the penis and the location corresponded approximately to that of the previous lesion, when he first came to the clinic on Jan. 5, 1935. Dark field examination showed numerous spirochetes (Spirochaeta pallida). Thereupon he received an intravenous injection of 0.04 Gm. of mapharsen. Within four to five hours after the injection he complained of fever and an eruption. The dermatitis was severe and required three weeks' rest before he was able to resume his work. Since December 26 the intramuscular injection of a bismuth compound at four day

intervals has been the only therapy. The Wassermann reaction of the blood on Feb. 2, 1940 was negative with both alcoholic and cholesterolized antigens; the Kline flocculation test, however, gave a 4 plus reaction with both diagnostic and exclusion antigens.

For the past two weeks the nails of all the fingers have been exfoliating. New nail plates are growing from the nail root and wall, forcing the old nail plates anteriorly. There is also a dark violaceous or blue line behind the free border of the older nail plates in the nails of some fingers, which Milian has described (Milian, G.: Lilac Arch on Nails in Syphilis, *Médecine* **4**:112 [Nov.] 1922).

DISCUSSION

DR. E. WILLIAM ABRAMOWITZ: The patient presents a symmetric semilunar groove involving all the finger nails. This has developed in the past two weeks. Do the members feel that this condition is syphilitic onychia?

DR. LOUIS CHARGIN: I do not think there is any suggestion of syphilis of the nails in this case. I should rather attribute the dystrophy to a disturbance in the bed of the nail following the arsphenamine dermatitis. An important point to bear in mind is that when a patient becomes sensitive to the organic arsenicals, that sensitivity may remain for a long time, and even a preparation like mapharsen, which rarely causes a generalized dermatitis, may cause a recurrence of the dermatitis. Patch tests before the injection may at times serve to determine whether the patient is still sensitive. In view of the fact that the patient showed the presence of spirochetes in the lesion, arsenic was indicated, but a much smaller dose should have been tried first.

DR. LEWIS B. ROBINSON (by invitation): I should advise not only being cautious but not giving the patient any arsenic at all. I do not think it makes any difference what dose is given. In these cases in which there has been an arsenical dermatitis, there will be another recurrence if an arsenical is given again.

DR. LOUIS CHARGIN: I must disagree with Dr. Robinson on this point. I do not think the rule is invariable. One must remember that this patient had an active lesion with spirochetes and therefore arsenic was indicated. If he were a syphilitic patient without active lesions, arsenic would not be indicated, considering his prior dermatitis. I think the arsenic should have been given in this case, but cautiously and in small doses.

DR. LEWIS B. ROBINSON (by invitation): I still disagree. Giving arsenic means taking a chance, even if the dermatitis occurs in only 1 case out of 10. There are other methods of treatment that can be used.

DR. HENRY D. NILES: Because of the active lesion containing spirochetes, I believe that there was certainly a justification for giving an arsenical compound to this patient. He reminds me of a patient I had a few years ago who was unable to tolerate even the smallest dose of arsphenamine, neoarsphenamine or silver arsphenamine but to whom I was able to give four full courses of mapharsen in the regular dosage without his having any reaction. I think that even with a history of a previous arsenical dermatitis, some other arsenical, especially mapharsen, was indicated in the present case. I agree with Dr. Chargin that the dose could have been much smaller. I do not believe one can assume that because the patient had a dermatitis before he would have one again with mapharsen later. I consider that the question of what to do with him now is the most pertinent one. He will probably have to get along with a bismuth compound and potassium iodide, and one must abandon the administration of arsenicals entirely. Serologically, he has apparently done well with the bismuth compound alone.

DR. FRANK E. CROSS (by invitation): Sometimes a reaction is favorable, as far as the patient's syphilis is concerned. In some patients who have had only a few intravenous injections of arsphenamine, a high temperature or perhaps some other reaction, develops, and the Wassermann reaction becomes permanently negative without any further treatment, all of which is probably due to a nonspecific fever therapy effect. I think the condition of the nails in this case has nothing

to do with syphilis but is due to the exfoliative dermatitis. If a patient has a reaction like jaundice or dermatitis, especially if he has it a long time ago, and particularly if the patient contracts syphilis so that he needs an arsenical, I should try an arsenical carefully. This patient received silver arsphenamine, which is usually tolerated well, and although he had a reaction the first time, I think Dr. Spiegel was justified in using another well tolerated drug, like mapharsen, instead. If I had been treating this patient, I would have started with a smaller dose, not more than 0.02 Gm. for the first dose. I would rather divide the dose of 0.04 Gm. and give him a dose of 0.02 Gm. twice a week, proceeding carefully and seeing the patient every time he came in for treatment rather than ordering a course of treatments and seeing him at the end of the course. All patients with syphilis should get individual attention.

Dr. Leo Spiegel: Regarding the administration of mapharsen to this man, I thought that after a lapse of over four years it was justifiable—in view of the infectious nature of his lesions—to give an arsenical and that mapharsen was chosen because of its supposedly less toxic reaction. The dose of 0.04 Gm. was not considered too high, as the patient weighed over 200 pounds (90 Kg.). No patch test was made, not only because of the long lapse in treatment—with the belief that the sensitivity to the arsenical had by this time disappeared—but also because I have little faith in tests of this kind in determining arsenical sensitivity. The condition of the nails is definitely not syphilitic onychia; nor am I certain that it is the end result of his exfoliating dermatitis.

Dr. E. William Abramowitz: Patch tests have not been of much benefit. If the patient gives a positive reaction, an arsenical dermatitis may not develop; if he gives a negative reaction, a dermatitis may still develop. As a rule, however, if the patch test gives a positive reaction, one had better be careful about giving arsenicals.

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Feb. 22, 1940

Erythroplasia of the Penis. Presented by Dr. Otto E. L. Schmidt.

M. D., aged 69, complained of a lesion of the penis of two and one-half years' duration. At the beginning he noticed a grayish, scaly, wartlike lesion on the dorsal surface of the glans, which was tender and which had a red, raw-appearing, nonbleeding surface beneath. The lesion slowly enlarged peripherally and was red, scaling and sharply circumscribed. Three roentgen ray treatments were given by his physician, and three specimens of tissue were removed for biopsy.

Examination reveals a well developed and well nourished man. The glans and the distal half of the penis are covered by a sharply circumscribed, dull red, scaling plaque. The edges of the prepuce are fused to the coronal sulcus in nearly the whole circumference. On the dorsum of the glans there is an area of infiltration about 1 cm. in diameter.

Serologic tests for syphilis gave negative results.

Examination of tissue histologically revealed the skin to be without sebaceous glands, hair follicles or sweat glands. It was covered by stratified squamous epithelium, which in a few small areas showed hyperkeratosis. For the most part the horny layer was absent, and there was mild parakeratosis. The stratum

granulosum was absent, and the rete pegs were wide, long and branched. The papillae of the connective tissue were long and narrow, some extending almost to the surface. The upper portion of the dermis was infiltrated with numerous cells, mostly lymphocytes and occasional large mononuclear cells. Some of the infiltrating cells have extended into the epithelium. There was no evidence of dyskeratosis.

DISCUSSION

DR. H. A. HAYNES JR., Akron, Ohio: I suggest the possibility of psoriasis.

DR. H. G. MISKJIAN: This man has consulted me in the past, first in April 1939. At that time he had the same lesions as today, and in addition he had a small, round, slightly indurated area on the dorsum of the glans. With the possibility of erythroplasia in mind, I thought of malignant degeneration. I took this area out with a biopsy punch. On examination I was not much surprised to find malignant degeneration with some whorl formation, which suggested prickle cell carcinoma. The rest of the lesion was not indurated and clinically did not correspond to my conception of erythroplasia. I was hopeful that I had taken all the indurated tissue and that induration might not recur, but months later I saw that a new area of induration had developed at that site, and I referred him to the outpatient department of Lakeside Hospital for further study and treatment. On the right side I had taken another biopsy specimen from the red, nonindurated area. There were elongation of the interpapillary pegs and a round cell infiltration. The condition looked more or less like psoriasis, but I do not think it is psoriasis. The case was unusual in my experience. At Lakeside Hospital it was pointed out that on the right side was a small infiltrated area, and a biopsy specimen was taken from there. This section is characterized by enormous elongation of the interpapillary pegs. On the surface of the epidermis there is some parakeratosis. Clinically the condition does not correspond to leukoplakia. Histologically, if the conception of Civat is accepted, erythroplasia is nothing but Bowen's disease of the membranes. There is nothing to remind one of Bowen's disease in this case, and the condition could not then be erythroplasia. However, Darier stated that erythroplasia is variable and that all examples are not of the same type. I call attention to the elongation of the interpapillary pegs, to the thinning of the epidermis and to the absence of dyskeratosis in the sections. The histologic picture would be more in keeping with a diagnosis of erythroplasia. The section taken from the indurated nodule I think is definitely carcinomatous or precancerous.

DR. H. N. COLE: I saw one section from this patient earlier, and I had been told that a diagnosis had been made of erythroplasia. I examined the patient at the same time and called the condition psoriasis. I looked at the section today, and I do not think there is any question about the malignant character of the lesion. Not only is there infiltration down to the corium with islands of the same type, but it is an extreme cellular infiltrate. Considering the patient's age and all other factors, I advise removal of the penis.

DR. H. G. MISKJIAN: I did not like to break the news to him myself.

DR. HUGO HECHT (by invitation): The first section clinically is psoriasis, but the second one is kraurosis penis. Many years ago I encountered one of the first examples of kraurosis penis. It was similar to this.

DR. H. G. MISKJIAN: It is true there is a rare form of kraurosis and that might fit in, but there is no true atrophy here.

DR. HUGO HECHT (by invitation): In psoriasis there is parakeratosis, but that is not typical in the section I examined.

Dermatitis Due to Oil of Cinnamon. Presented by DR. CLYDE L. CUMMER.

R. C., a man aged 41, showed swelling of the fingers, with an erythematovesicular eruption and some fissuring in the interdigital spaces of the left hand. He was seen first in October 1939, and it was suspected that an external irritant was responsible, but it was not until a month later that it was found that just

prior to the appearance of the eruption, he had started using teel as a dentifrice. He held his toothbrush in his left palm and dropped the teel onto it, the excess running off and through the fingers to the dorsum of the hand. There had been no irritation of the mouth, lips or face at any time. The dermatitis cleared up promptly as soon as the use of the dentifrice was discontinued.

The manufacturers kindly sent specimens of the ingredients of the dentifrice for patch tests. Teel itself gave a strongly positive reaction, as did specimens of the flavoring material, while all other ingredients gave negative results. Samples of the six oils used in blending the flavor were employed for patch tests in 1 per cent solution or in suspension in 50 per cent alcohol. All these oils gave negative results except oil of spearmint, which elicited a slight reaction, and oil of cinnamon, which caused a strongly positive reaction.

DISCUSSION

DR. H. N. COLE: It has been shown that in many cases of so-called bakers' dermatitis the offending agent is cinnamon. If the baker stays away from cinnamon, he is able to carry on his work.

DR. CLYDE CUMMER: Cinnamon is used in the manufacture of some types of hard candy, and candy manufacturers are also liable to have this difficulty. Tulipan (ARCH. DERMAT. & SYPH. **25**:921-923 [May] 1932) stated that no instance could be found in the literature up to that date of a dermatitis due to cinnamon. He reported on a baker with severe dermatitis of the hands who had handled cinnamon sugar, a mixture of cane sugar and cinnamon powder.

DR. H. A. HAYNES JR., Akron, Ohio: I have had a patient with a sensitivity to lip stick. Edema of the face developed, but with no involvement of the lips. Patch tests on the skin gave positive results. I cannot explain it, but the lips were not sensitive.

DR. R. E. BARNEY: I should like to congratulate DR. CUMMER on bringing to our attention this new possible source of contact dermatitis.

Papulonecrotic Tuberculid. Presented by DR. CHARLES G. LAROCCO and DR. CLYDE L. CUMMER.

B. H., a woman aged 37, shows on the arms, especially on the extensor surfaces, extending to the shoulders and to a lesser extent on the chest, numerous small, flat, circular, nonpigmented scars. There are scattered papular and umbilicated papulopustular lesions of rice grain size, some showing necrotic central plugs. These lesions have been appearing since 1923. On the right side of the neck are several irregularly stellate scars, apparently from broken-down tuberculous glands. The glandular condition started when she was 2 years old.

She has received several courses of intramuscular injections of bismuth subsalicylate, one course of intravenous injections of neoarsphenamine and ten injections of gold sodium thiosulfate. She stated the belief that the condition has improved with this treatment.

Fluoroscopic examination of the chest on July 15, 1937 showed no evidence of pulmonary tuberculosis. Numerous serologic tests for syphilis have given mostly negative results, although occasionally there have been slightly positive results. The spinal fluid was normal.

Histologic examination of tissue from one of the necrotic lesions showed the epithelium in most areas to be intact, but there was one area of ulceration which was covered with a thick layer of desquamated epithelium and polymorphonuclear leukocytes. There was an area of necrosis at the site of this ulcer, extending into the corium, and this area showed considerable leukocytic infiltration. The surrounding subepithelial tissue showed lymphocytic infiltration, with a definite tendency toward perivascular distribution. In addition to the ulcer described, there was one area showing moderate hyperkeratosis and some hyaline degeneration of the dermis.

DISCUSSION

DR. CLYDE L. CUMMER: The histologic section in this case was rather unusual. The changes were largely vascular and perivascular. I should like Dr. Rehbock, the hospital pathologist, to discuss it.

DR. D. J. REHBOCK (by invitation): I think there was nothing in the section characteristic of tuberculous inflammation. The inflammation was severe, and the cellular infiltrate was extensive, but I could not make any positive diagnosis on the basis of the section.

Vitiligo. Presented by DR. CLYDE L. CUMMER and DR. CHARLES G. LAROCCO.

C. R., a man aged 84, was a uniformly colored, light-skinned mulatto until he was 38 years old. He then noted an itching spot on the forehead, which turned lighter in color, and during the next fifteen years his color turned a uniform white.

He first came to the dermatologic clinic at Charity Hospital on July 19, 1929, because on the ears and the temples "blotches" of returning pigment were noted. He has made occasional visits, the last on Aug. 25, 1939, with the same complaint, but it will be noted that at present the entire cutaneous surface is practically free of pigment.

Serologic tests for syphilis on Aug. 2, 1929 gave negative results.

DISCUSSION

DR. CLYDE L. CUMMER: This case was presented simply as a matter of curiosity, to show the large extent and the long duration of the trouble.

DR. H. J. PARKHURST, Toledo, Ohio: I was surprised to find that the patient has never suffered from sunburn since he has had this condition.

DR. CLYDE L. CUMMER: When the pigment returns, the first evidence is a red spot which fades out and becomes brown.

Tuberculosis Verrucosa Cutis of More Than Sixty Years' Duration. Presented by DR. CHARLES G. LAROCCO and DR. CLYDE L. CUMMER.

F., a man aged 79, presents an eruption of almost the entire surface of the left buttock, a large part of which is an atrophic white scar. However, within this scarred area are elevated lesions of bright red, with ulcerated and crusted surfaces. At one pole of the scar there is a bright red, crescentic elevated patch about 1 by 4 inches (2.5 by 10 cm.), with a verrucous surface.

Serologic tests for syphilis gave negative results.

Histologic examination showed the surface epithelium to be thickened and irregular, with acanthosis and hyperkeratosis. The subepithelial tissues, including the cutis and some of the subcutaneous fibroadipose tissue, showed a severe degree of granulomatous inflammation characterized by scattered small areas suggestive of tubercles, with endothelial cell proliferation and occasional Langhans giant cells. All of the tissue showed extensive infiltration by lymphocytes and numerous plasma cells, and in several areas there was abscess formation, with dense polymorphonuclear leukocytic infiltration. Ziehl-Neelsen and Gram stains showed no evidence of tuberculous or other organisms. The histologic picture was most suggestive of either tuberculosis or syphilis.

DISCUSSION

DR. H. J. PARKHURST, Toledo, Ohio: I believe this lesion probably originated around a discharging anorectal fistula.

DR. R. E. BARNEY: I had that same impression, and in examining the right buttock just to the right of the anal cleft one sees a depressed scar that might be a healed fistula. I agree with the diagnosis as presented.

DR. H. N. COLE: I believe this would be a suitable case for treatment by injections of starch, as recommended by Kile (ARCH. DERMAT. & SYPH. **39**:471 [March] 1939).

Radiodermatitis with Epitheliomas. Presented by DR. CHARLES G. LAROCCO.

W. T. M., a woman aged 48, had received roentgenotherapy for acne of the face twenty-five years ago.

The forehead, all of the face and portions of the anterior part of the neck present large areas of atrophy and telangiectasia, characteristic of radiodermatitis. In addition, on the right temple there is a warty growth, rounded, well raised and crusted, measuring 5 mm. in diameter. On the left cheek, adjacent to the ear there is a flat, scaly lesion, measuring 7 mm., with a threadlike pearly border. About the eyelids are rice grain–sized to split pea–sized keratoses, suspiciously malignant in appearance.

DISCUSSION

DR. JOHN A. GAMMEL: Despite the fact that these epitheliomas were caused by roentgen rays, I believe they could be attacked therapeutically by a heavy dose of roentgen rays.

DR. CLYDE L. CUMMER: I have recently had a patient with extensive radiodermatitis of the neck of many years' standing. At the suggestion of Dr. Duffy, of the Memorial Hospital in New York, I administered liver extract and vitamin B_1 (thiamine hydrochloride). I do not understand the rationale, but there was considerable softening of the tissues. She looks much better and feels much more comfortable.

DR. EARL W. NETHERTON: There is another treatment that is comparatively new, which I have had occasion to observe in 2 cases. That is the use of petrolatum impregnated with radon. In 1 case roentgen ray dermatitis was on the hands of a dentist, and in the other the condition followed roentgenotherapy of pruritus ani. Improvement has been noted in the relief of subjective symptoms and also has resulted in improving the texture of the skin.

Tumor of Adrenal Cortex, with Subsequent Juvenile Acne Vulgaris, Hirsutism and Precocity. Presented by DR. HAL ELSON FREEMAN.

S. L. F., a girl aged 3 years and 9 months, has had progressive enlargement of the clitoris and labia since the age of 2 months and pubic hair since the age of 7 months. She began talking at 13 months, and the voice became coarse a month later. An acneform eruption developed when she was 19 months old, and when she was 3 years old it spread from the forehead to the nose, face, back and shoulders.

Several immediate ancestors have died from "cancer" in the first decades of life, and several others have had various types of chronic diseases, such as peptic ulcer, in childhood, and there have been several instances of functional endocrine disturbances. The mother has exophthalmos and a palpable thyroid.

Physical examination reveals exceptionally well developed and masculine-appearing legs, thighs and shoulders. The patient is inquisitive and is mentally precocious. The forehead, face, shoulders and back are the sites of pinhead-sized to BB shot–sized follicular, papular and pustular lesions. The affected skin appears oily, and there are many scattered comedos. There is present on the extremities, in the axillas and around the areolas of the breasts abnormally well developed, extensive, dark hair. In the pubic area the hair is exceptionally long and black and is of the adult type. Its distribution, however, is more of the masculine type. The hair of the scalp is of fine texture and lusterless.

The blood pressure has varied between 110 to 125 mm. of mercury systolic and 70 to 85 diastolic. The breasts are not enlarged. There is a firm, painless mass about the size of a medium-sized orange easily palpable in the left upper quadrant of the abdomen. The external genitalia are erythematous and hypertrophic. The clitoris is about 1.375 cm. in diameter and about 3.5 cm. in length when flaccid. The urethra is under this organ, not in it. No prostatic tissue is palpable rectally.

One specimen of urine showed a trace of albumin and another one a 1 plus reaction for sugar, but other specimens have been normal except for the presence of many phosphate crystals and bacteria. Serologic tests for syphilis gave negative results.

The fasting blood sugar on Feb. 14, 1940 was 72 mg. and on February 20 104 mg. per hundred cubic centimeters. The total chlorides (whole blood) amounted to 184 mg. and the urea nitrogen to 11.2 mg. per hundred cubic centimeters of blood. Chlorides as sodium chlorides amounted to 304 mg. and the calcium content of the blood was 12.6 mg. per hundred cubic centimeters. On February 14 the cholesterol content of the serum was 142 mg., and on February 20, 156 mg., per hundred cubic centimeters of serum.

Roentgenograms revealed a normal sella turcica. The epiphyses of the long bones were all present, and all eight of the carpal bones were well formed. This,

Fig. 1.—Juvenile acne in a girl aged 3 years associated with tumor of the adrenal cortex.

according to Todd's standards, represented a bone age of 10½ to 11 years. A flat roentgenogram of the abdomen and intravenous pyelograms revealed a right kidney with three normal-appearing calices. The left kidney was poory visualized except for the mass above, which was well outlined, measured 7 by 8 cm. and had displaced the left kidney downward considerably.

DISCUSSION

DR. HAL ELSON FREEMAN: This patient is interesting to the endocrinologist, because of the glandular disorder, and to the dermatologist, because of the acne and hirsutism. I have checked up on the cholesterol content of the blood, which should give some evidence of thyroid activity. If there is hypercholesteremia, the basal metabolic rate is low, and if there is a low cholesterol content, the basal

metabolic rate is high. The blood cholesterol has been in the lower limits of normal. That makes me think that the thyroid function is probably normal. There are several articles in the literature reporting on large series of young girls with acne vulgaris in whom estrogen was absent. Further studies are being made. I anticipate the finding of an increase in androgenic substances, which would explain the presence of the patient's acne vulgaris. Surgical removal of the adrenal tumor is contemplated in the near future.

Fig. 2.—Hirsutism due to tumor of the adrenal cortex in a girl aged 3 years.

NOTE.—Her intelligence quotient was found to be 124. On March 20 the urinary assay showed 148 international units of androgen and 20 rat units of estrogen per twenty-four hour output. Preoperatively, desoxycorticosterone was administered. The sodium and potassium content of the blood and the blood and serum chlorides were followed carefully both preoperatively and postoperatively.

Surgical operation for removal of the adrenal tumor was performed on April 16. The tumor was friable grossly and was composed microscopically entirely of immature cells of neoplastic type, which were called carcinoma solidum by members of the department of pathology, City Hospital.

On the fifth postoperative day the patient died from the effects of a streptococcic septicemia and pleuritis. The blood pressure had been maintained at a satisfactory level before this complication developed.

There were small areas of metastases in the lungs. The right adrenal was normal at autopsy.

Pseudoxanthoma Elasticum. Presented by Dr. Joseph H. Shepard (by invitation).

R. S., a woman aged 31, had been troubled with a slowly progressing eruption since childhood. At present she is five months pregnant (her first pregnancy). She stated the belief that during the second and third months of her pregnancy the involved areas increased in size more rapidly than ever before but that now progress has stopped completely.

The patient's sister, aged 31, has the same condition, of about ten years' duration, in the same locations and in addition behind the knees. However, none of the patches were as prominent as in the patient. The patient's sister has 2 children, aged 11 and 9 years, who now have no evidence of this trouble. The patient's brother, aged 24, has had the same condition on his neck for two or three years, but it has not become prominent.

There are rather sharply defined areas covering the front and sides of her neck, the flexor folds of her arms and the upper inner surfaces of her thighs. These areas are composed in general of indefinite, pinhead-sized to pea-sized, firm, flat papules, which in places have coalesced to form much larger patches. In places there are fine streaks 0.5 to 1.5 cm. in length. The papules, patches and streaks are all definitely yellowish. In areas around her neck there are many telangiectatic blood vessels. She has no history of any ocular trouble. The light and accommodation reflexes were normal. The tension was normal. Ophthalmic examination revealed several spots of choroiditis with pigment disturbance in both eyes. Examination of the right eye disclosed many angioid streaks beginning from a circular area around the disk and extending like wagon wheel spokes toward the periphery of the fundus. The maculas seemed normal, but there was one angioid streak close below the macula of the left eye, as well as a few other angioid streaks.

Serologic tests for syphilis gave negative results. The hemogram was normal. Histologic examination revealed clumps of degenerated and swollen elastic tissue in the middle and lower parts of the cutis. Except for this finding the tissue was essentially normal.

DISCUSSION

Dr. H. N. Cole: This patient presents the most extensive example of pseudo xanthoma elasticum I have ever seen. The familial character of the disease has been shown, and I wish to congratulate Dr. Shepard on the excellent presentation.

Dr. Joseph H. Shepard (by invitation): I shall attempt to follow this family over an extended period in order to see if this disease develops in the children of the sister and the child of the patient.

Dr. C. J. Shepard, Columbus, Ohio: The lesions on the elbows developed following pregnancy. What connection her pregnancy has had, I do not know.

A Case for Diagnosis (Syphilitic Dactylitis?). Presented by Dr. Clyde L. Cummer and Dr. Charles G. LaRocco.

J. B., a Negro aged 56, while on duty as a railroad porter, on Jan. 6, 1940 injured the tip of the left index finger while he was tucking bedding under a berth. There was no pain until two days later, when the finger became swollen. When seen by us twenty-three days after the injury, the finger was swollen to twice its normal size, the skin was red and glossy, the markings were obliterated and the paronychia was badly swollen. While the appearance suggested the presence of pus, the attending surgeon had incised it on two occasions and found none.

The patient stated that he had a penile sore thirty years ago. Mercury pills were taken for six months, but no subsequent treatment was received. The pupils were irregular in outline and fixed to light. The knee jerks were active. The Wassermann and Kline reactions of the blood on January 31 were positive.

Since January 28 the patient has received three injections of bismuth subsalicylate intramuscularly and iodides by mouth. Soon after treatment was started the pain abated and the swelling subsided greatly. The patient was able to return to work on February 10.

A roentgenogram taken on January 10, four days after the injury, showed a comminuted fracture of the base of the distal phalanx, involving the joint. The position was good. Some hypertrophic changes in the bone were noted along the shaft of the proximal and middle phalanges of the fingers.

A second roentgenogram, taken on January 19, showed decrease in the density of the distal phalanx, so that the bone detail was poorly defined. There was also decreased density of the middle phalanx, especially in the region of the head.

A third roentgenogram, taken on February 15, forty days after the injury, showed considerable deformity of the base of the distal phalanx. The fragments were in apposition, with little displacement. There was no evidence of callus. Some absorption of the fragments was observed. The joint space between the middle and the distal phalanx was poorly defined as a result of atrophy or absorption of the joint cartilage. As compared with the second roentgenogram, this one showed more decalcification of the middle and distal phalanges and some absorption of the fragments of the distal phalanx.

DISCUSSION

DR. I. L. SCHONBERG: In view of the history of injury, I offer a diagnosis of a possible paronychia due either to a staphylococcus or to a fungus.

DR. CLYDE L. CUMMER: We presented this case with the idea of getting the opinion of the members as to whether the changes in the bone are due to trauma or in part to a latent syphilitic infection. The first roentgenogram taken after the injury showed merely a fracture. The patient had no pain in the finger until two days after the injury, at which time the finger became swollen. The attending surgeon thought there might be some infection, as Dr. Schonberg has suggested, and made an incision, but no pus was obtained. The second roentgenogram showed decalcification of the middle phalanx. The attending surgeon felt that the old syphilitic infection could account for it. The attending roentgenologist was in doubt. Immediately after administration of iodides and bismuth there was a decided improvement in the finger. The swelling went down at once, and the patient was willing to return to work. I can hardly accept Dr. Schonberg's suggestion after seeing the improvement. The most recent roentgenogram made a few days ago showed decalcification with no callus formation.

DR. JAMES R. DRIVER: I was interested in the roentgenograms of the finger. The first one did not show osteoporosis. The bone looked approximately normal. From the photographs it seems as if some secondary infection was present. It is known that infections in the finger, particularly in the distal phalanx, will produce this type of reaction in the bone. The fact that it did not show in the first roentgenogram would lead me to believe that the osseous changes were not due to syphilis but to secondary infection. However, syphilis may be a factor in the prolonged healing.

DR. C. GLENN BARBER (by invitation): I looked at this patient from the orthopedic standpoint. I did not feel after looking at the roentgenograms that one could attribute the changes shown by them to anything other than trauma. However, examination of the man leaves no question that there is something in addition to the trauma. He had rather extensive involvement of the soft parts. One function of a joint is motion and the other is stability. He had decided limitation of motion. He had comparatively painless instability of his joint. Whether

the condition happens to be of the Charcot type or some other form of syphilitic involvement, the joints are less painful than with ordinary forms of injury.

DR. H. N. COLE: I think this patient is a good illustration of the influence of trauma on an old syphilitic infection. It is well known that as the result of trauma a syphilitic process may flare up.

Tertiary Syphilis (Gummas of the Arm). Presented by DR. CLYDE L. CUMMER and DR. CHARLES G. LAROCCO.

B. L. C., a man aged 34, presented himself first at the outpatient department of Charity Hospital with many irregularly circular and stellate depressed white scars on the right arm, beginning about 3 or 4 inches (7.5 or 10 cm.) above the wrist and extending almost to the axilla. They were most closely grouped over the extensor surface around the elbow, and interspersed were a few nodules and occasionally irregular, deep, discharging ulcers. The scar tissue had caused considerable contraction of the soft tissues. The arm was held in an extended position, and flexion was possible only through an angle of about 15 or 20 degrees.

The patient stated that these sores started appearing at least ten years ago, breaking down and healing and followed by others. The only treatment employed had been salves.

The Wassermann and Kline tests gave positive reactions. Roentgenologic examination showed a slight irregularity of the periosteum of the distal end of the humerus, principally along its epicondylian line, and slight subarticular demineralization of the lateral aspects of the humerus and radius at the humeroradial joint. The irregularity of the soft tissue was shown, and it would appear that the lesions of the bone and joint were simply secondary to the lesion of the soft tissue.

DISCUSSION

DR. R. E. BARNEY: The process has almost healed with the exception of two areas. One of these is below the left elbow. I think with any lesion that has been present for this length of time, one should consider the possibility of malignant degeneration.

DR. C. GLENN BARBER (by invitation): The cutaneous condition has improved considerably. A more judicious time for taking a specimen of tissue for biopsy would be at some later stage.

DR. CLYDE L. CUMMER: I felt that since the patient has had no treatment whatever, trauma from biopsy might make the whole condition break down. The biopsy can be postponed and performed if the lesion does not improve.

A Case for Diagnosis (Trophic Elbow Joint Due to Syringomyelia? Tertiary Syphilis with Charcot Joint?). Presented by DR. CLYDE L. CUMMER and DR. CHARLES G. LAROCCO.

M. B., a Negress aged 41, presented a greatly swollen and deformed left elbow joint. Increasing swelling had been noted for the last two or three years, and this finally made the patient think the joint had been dislocated. There was relatively little pain on motion, although there has been more in the last few months. The arm showed several superficial atrophic scars, said to have resulted from burns.

The patient had been seen in the dermatologic clinic of Charity Hospital in 1934, at which time the Wassermann reaction of the blood was strongly positive. At this time a diagnosis of latent syphilis was made, and three courses of injections of a bismuth compound and two courses of neoarsphenamine had been given.

Neurologic examination revealed the loss of the sensation of pain and temperature in both upper extremities, the vibratory sensation of the upper left extremity and of both lower extremities, and the sense of discrimination of the upper left extremity. The pupils reacted to light. The consensual reaction was present. The reflexes of the knees were equal and active. The reflexes of the

ankles were equal and active as well. The Romberg test gave a positive result. The spinal fluid on Oct. 25, 1939 was normal.

A roentgenogram of the left elbow showed the presence of innumerable large and small calcified bodies within the joint and periarticular joint spaces or bursae, the largest being 3 cm. in diameter. There was almost complete loss of the humero-ulnar joint space. There was no evidence of old fracture.

DISCUSSION

DR. H. N. COLE: I regard this case as an extreme example of Charcot joint of the elbow. There is bony proliferation and along with it fluid in the joint. It is true that one may have such involvement with syringomyelia as well as with tabes. Examination of the spinal fluid gave negative results, but with old syphilis the spinal fluid may sometimes show nothing.

DR. I. L. SCHONBERG: I should like to know why the temperature of the affected arm is higher than that of the opposite arm. Has aspiration been performed?

DR. C. GLENN BARBER (by invitation): The elbow was aspirated, but no fluid was obtained. I think this condition is a typical Charcot joint. The patient does not show decided manifestation of tabes, but that is not necessary. Many patients before showing any neurologic signs will show pronounced changes in the joints. She shows characteristics of a lessened normal function. Her flexion is greatly limited. Supination and pronation are limited. She now is beginning to show lateral instability. She can completely dislocate her elbow and put it back. I think the present symptoms are due to particles of bone acting as foreign bodies. If it is thought necessary, these can be removed.

A Case for Diagnosis (Tuberculosis of the Elbow Joint? Tertiary Syphilis of the Elbow Joint?). Presented by DR. CLYDE L. CUMMER and DR. CHARLES G. LAROCCO.

G. P., a Negro aged 33, came to the orthopedic clinic of Charity Hospital on Oct. 24, 1939, stating that five days previously, while working in an automobile junk yard pounding with a heavy hammer to smash old cars, his right arm suddenly became sore and his hand swollen. The elbow has been painful since this time.

Crepitation and fluctuation were noted. The joint was aspirated at that time, and no fluid was secured. Later a history was obtained of soreness of the elbow for a year prior to the time when the acute symptoms appeared.

The right elbow is bent at an angle of about 160 degrees. Flexion and extension are practically impossible. There is swelling of the joint and obvious deformity, with the appearance suggesting that the forearm has been pulled up behind and above the end of the humerus so as to shorten the arm. Crepitus is present.

Roentgenologic examination showed destructive arthritis, the destructive process involving all of the joint surfaces of the component bones, the outlines of which were irregular. There were no evidences of hypertrophic changes, but multiple loose bony particles were seen within the joint, probably sequestrums from destroyed bone ends. The capsule of the joint appeared distended.

A history was obtained of a penile lesion seventeen years previously. No anti-syphilitic treatment had been received. The Wassermann and Kline tests gave positive reactions on Oct. 28, 1939. The spinal fluid was normal on February 15.

On February 14 the elbow joint was opened to obtain material for biopsy. The capsule was much thickened and gelatinous but free from fluid.

Histologic sections of the soft tissue showed all but one of the fragments to be composed of a loose type of connective tissue, which was moderately well vascularized and showed a few small areas of lymphocytic infiltration. One fragment was composed of fibrous connective tissue and voluntary muscle, and in the central portion of the tissue there were two focal areas of inflammation, which were highly suggestive of miliary tubercles. They were characterized by small

amounts of necrosis, with surrounding epithelioid cell formation and associated Langhans giant cells. No other similar lesions were found in any of the other fragments of tissue.

Sections of the fragment of bone showed one surface to be a periosteal surface which presented no significant pathologic change. No articular cartilaginous tissue was seen. The bony trabeculae showed no significant change, and there was no significant change in the fatty marrow. A diagnosis of chronic inflammation of the synovia and adjacent fibromuscular tissue, probably tuberculous, was made.

DISCUSSION

DR. H. H. JOHNSON JR.: I had an almost identical case at Lakeside Hospital with a rather rapidly progressing process in the elbow joint. The patient was treated for syphilis. In the meantime the joint was aspirated and guinea pig inoculations made, and the condition was proved to be tuberculous. Have such inoculations been made with aspirated material from this patient?

DR. C. GLENN BARBER (by invitation): Since no fluid was obtained by aspiration, guinea pig inoculations were not made.

DR. EARL W. NETHERTON: Since this man has lost 25 to 30 pounds (11 to 13.5 Kg.) and has frequent night sweats, I should like to ask the presenters if a roentgenogram of his chest has been made.

DR. CLYDE L. CUMMER: I do not believe that as yet roentgenographic examination of his chest has been done. The man slipped entirely away from observation, and a social service worker contacted him and brought him in for this meeting.

Keloidal Scars at Sites of Bullae from Barbiturate Poisoning. Presented by DR. CLYDE L. CUMMER and DR. CHARLES G. LAROCCO.

D. A., a man 21, was admitted to Charity Hospital on July 2, 1939, in coma. He had taken 150 grains (9.7 Gm.) of phenobarbital thirty-six hours previously in a suicidal attempt. At examination on admission the temperature was 40.6 C. (105.1 F.); the respirations, 60 per minute; the pulse rate, 160, and the blood pressure, 126 mm. of mercury systolic and 40 mm. diastolic. The skin was livid, and there was cyanosis, but no cutaneous lesions were seen. Signs of pneumonic consolidation were found at the bases of both lungs. All reflexes, including the corneal, were absent.

At first sulfapyridine was given through a stomach tube. Eighteen hours after admission, when it was discovered that phenobarbital had been taken, picrotoxin was administered.

Ulcerations over the sacrum were observed on the fourth hospital day, and hemorrhagic bullae were noted on the heels. These lesions eventually broke down and were not completely healed until six weeks later.

Two weeks after admission there were signs of peripheral neuritis, with paralysis of the right ulnar nerve.

Now the patient presents keloidal scars on pressure points on the sacrum, the tips of the heels and the outer malleoli, at the sites of healed ulceration.

Urinalysis showed no abnormalities. Leukocytes in the blood varied from 7,900 to 26,500 per cubic millimeter. Diplococci were found in the sputum but could not be typed.

DISCUSSION

DR. CLYDE L. CUMMER: I should like to have you call on Dr. Miller, of the resident staff of the hospital, who has observed a number of cases of this kind in the emergency service at the hospital.

DR. ROBERT C. MILLER (by invitation): Since the first of July 5 patients with severe barbital poisoning (doses of from 60 grains [4 Gm.] of sodium amytal to 250 grains [16 Gm.] of barbital having been taken in attempted suicides) have entered the hospital. On 4 of the 5 hemorrhagic bullae were observed, which appeared from the second to the fifth day after the barbiturate had been taken.

Picrotoxin was used in various doses (from ⅓ grain to 2 grains [0.02 to 0.13 Gm.]) over twenty-four to thirty-six hours. Four of the patients recovered.

DR. CHARLES G. LAROCCO: Dr. Cummer and I have been especially interested in this group of cases because of the development of hemorrhagic bullae. I have never seen the barbiturates produce lesions of this type when given in therapeutic doses. We wondered whether the picrotoxin was a factor in producing this. I believe this substance is analogous to metrazol, and there are no reports of any cutaneous eruption following therapy with that drug. We are inclined to believe that this cutaneous manifestation is a result of barbiturates.

DR. CLYDE L. CUMMER: The conditions in these cases were all due to suicidal attempts. There is supposed to be a close margin between the therapeutic and toxic dose of picrotoxin. Persons who have had these large doses of barbiturates will take more picrotoxin than can be given to a person in health. The question arose in our minds as to whether the bullae were from the picrotoxin or from the barbiturates. There are several cases of barbiturate poisoning reported in the literature; hemorrhagic bullae apparently developed in all of them, and the patients all went through the same stage of prolonged ulceration.

ATLANTIC DERMATOLOGIC CONFERENCE

New York, March 9, 1940

DR. FRANK C. COMBES and DR. GEORGE C. ANDREWS, *Presidents*

DR. J. GARDNER HOPKINS and DR. ANTHONY C. CIPOLLARO, *Secretaries*

Trophic Ulcer of the Nose. Presented by DR. MAURICE J. COSTELLO, New York.

H. A., an American aged 47, a watchman, was first seen in November 1938, referred from the Manhattan Eye, Ear and Throat Hospital. He gave a history of sudden loss of speech and of sensation in the left side of his body several days before a diagnostic spinal puncture was performed. He stated that an ulcer appeared on the left side of his nose the following day. While in the hospital he complained of excessive sweating limited to the left half of his body. He had had a severe injury of the head twelve years before, accompanied by transitory hemiplegia on the left. The duration of his complaint is eighteen months.

Examination shows an ulcerating lesion of the left nostril with some destruction of the ala nasi. He also has a proliferative ulcerating lesion on the septum resulting in occlusion of the left nostril. There is beginning atrophy of the septal cartilage. In an area extending about 1 inch (2.5 cm.) around the left nasal aperture there appears to be an infectious eczematoid dermatitis. The sinuses appear hazy on transillumination. There is moderate injection of the blood vessels of the scleras.

Physical examination showed the heart to be slightly enlarged to the left. There was some tenderness in the left upper quadrant of the abdomen. Neurologic examination showed generalized hyperreflexia, with bilateral Hoffmann signs and equivocal Babinski signs. There was a transitory ankle clonus on the right. No evidence of thrombosis was noted.

On Feb. 2, 1939 the nasal discharge showed no tubercle or lepra bacilli. Culture of the material showed Staphylococcus aureus, a few hemolytic streptococci and Micrococcus catarrhalis. The Wassermann and Kahn reactions were negative on five occasions. Blood counts were normal except for mild leukocytosis. The urine was normal.

On Nov. 25, 1938 histologic examination showed papillary hyperplasia of the stratified squamous epithelium, hyperkeratosis, a small area of ulceration and an acute inflammatory reaction. In the submucosa there was dense connective tissue, with considerable inflammatory reaction. Histologic diagnosis was hyperkeratotic papilloma.

The patient received antisyphilitic therapy, including neoarsphenamine and saturated solution of potassium iodide. The treatment had no effect on the lesion.

Leukemia of the Skin (Aleukemia). Presented by Dr. E. William Abramowitz, New York.

J. L., a Russian man aged 69, is presented from the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital. The eruption on the back was noted about the summer of 1939. It became generalized, finally involving the face, trunk and extremities. When the patient first presented himself there were pea-sized to olive-sized, raised, purplish, hard nodular lesions, particularly on the back. He complained of itching, but there was no pain. Erythematous nodular lesions of moderate size were also present on the face, the eyebrows and the upper and lower extremities. His general health has been good.

The Wassermann and Kahn reactions were negative. The urine was normal. A blood count on admission showed 108 per cent hemoglobin and 5,200,000 erythrocytes per cubic millimeter; a differential count showed 64 per cent polymorphonuclear leukocytes, 19 per cent lymphocytes, 6 per cent eosinophils, 3 per cent basophils and 8 per cent monocytes. The color index was 1 and the red cells were normal. At present the blood count has shown a slight drop in the leukocyte count. The only other change is that there is slight macrocytosis. Since the patient has been receiving injections of liver his leukocyte count has risen from 3,000 per cubic millimeter to normal. Histologic examination showed perivascular infiltration composed almost entirely of small round cells of the small lymphocyte type. There were a few wandering connective tissue cells. The histologic diagnosis was lymphatic leukemia of the skin.

The patient is receiving filtered roentgen rays to the affected areas. He has also been receiving increasing doses of liver by injection.

DISCUSSION

Dr. J. Frank Fraser, New York: The condition in Dr. Abramowitz' case is a typical example of the aleukemic form of lymphatic leukemia. Probably leukemia cutis of the lymphoid variety always occurs in the aleukemic form. Too many clinicians overlook the fact that the fundamental changes in leukemia are in the tissues and not in the blood. In the great majority of cases, as in the case under discussion, the initial lesion is in the lymph nodes. In a case reported (Rössle, R., cited by Richter, M. M., in Downey, H.: Handbook of Hematology, New York, Paul B. Hoeber, Inc., 1938, vol. 4, pp. 2887-3028) the skin seemed to be the primary site of the disease, as the lymph nodes were not enlarged. The blood picture is secondary and a manifestation of metastasis.

In regard to the histologic picture, the infiltration of neoplastic cells may be (1) diffuse, (2) periglandular or (3) perivascular. The sections in the case under discussion show a perivascular distribution.

In the case which follows this one, presented by Dr. Traub, there is a note on the pathologic report that the microscopic picture is suggestive of both lymphatic leukemia and lymphosarcoma. This is not surprising, for it is impossible at times to differentiate these two conditions on histologic grounds. The trend among present day investigators seems to lend strong support to the view that lymphatic leukemia and lymphosarcoma are the same disease, the only difference being that in lymphatic leukemia there is metastasis to the blood stream.

In regard to treatment, the plan followed at the Memorial Hospital is to place the patient in the Hublein chamber. In this chamber the patient receives

70 r per hour for twenty out of twenty-four hours. This method is efficient in reducing the blood count, though it may cause anemia. I understand that in the present case Dr. Abramowitz is using the spray method. Theoretically this method should lessen the chances for metastasis.

Dr. E. William Abramowitz, New York: After the first few roentgen ray treatments, the patient showed a distinct drop in the leukocyte count, from 8,000 or 9,000 to 3,000 per cubic millimeter. He was getting about one-half erythema dose with filters, and I had to cut down the dose and increase the intervals between treatments. He was also given liver extract. The lesions responded beautifully. As you see today, most of them are now nothing but pigmented lesions. I think Dr. Fraser is correct. This man's condition probably started with glandular enlargement, and the cutaneous condition, I believe, appeared later. Examination of the cells obtained by sternal puncture showed that they were practically normal in every way.

Lymphatic Leukemia. Presented by Dr. Eugene F. Traub, New York.

E. D., a housewife aged 64, is presented from the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital, where she has been under observation since Sept. 15, 1939. There have been a loss of weight and a tired feeling. General physical examination showed little lymphadenopathy, most prominent in the groin and axillas. Her previous history was irrelevant. The duration of the eruption is ten to twelve months.

An eruption has been present mostly on the face, the extensor aspects of the arms and hands and the back, with occasional scattered lesions elsewhere on the body and legs. These lesions as well as the lymphadenopathy have responded quickly to roentgenotherapy, and many of the lesions have now disappeared. The original appearance was that of erythema multiforme of an iris type. More recently only bullous lesions have been noted, particularly on the arms. The lesions are bright red raised wheals varying in size. Some are excoriated and some papular and vesicular, suggesting papulovesicular urticaria. On the dorsa of the hands and fingers she has had, at times, hemorrhagic lesions, some of which have been slightly ulcerated. She also has an ulcerated lesion on the labium majus.

Examination of the blood gave the following results:

Date	Erythrocytes per Cubic Millimeter	Leukocytes per Cubic Millimeter	Hemoglobin, per Cent	Polymorphonuclear Leukocytes, per Cent	Lymphocytes, per Cent	Monocytes, per Cent	Eosinophils, per Cent
10/14/39	4,380,000	29,100	78	4	95	1	..
10/26/39	4,070,000	12,200	83	10	89	..	..
11/ 2/39	3,640,000	6,700	74	10	88	1	1
1/22/40	3,740,000	7,350	79	36	58	5	..

Histologic examination of an excised lymph node showed that the normal architecture of the node was no longer present; there was uniform architecture everywhere, with lymphoid elements extending into the capsule and surrounding fat. There was a relatively uniform distribution of lymphoid cells, the nuclei of which had distinct membranes and within which there were prominent chromatin masses. Here and there enlarged reticulum cells were seen. Mature lymphocytes formed the minor proportion of the cells. The small blood vessels were uniformly engorged. The histologic diagnosis was lymphatic leukemia of the lymph nodes, with a note that the histologic picture was one that was suggestive of both lymphatic leukemia and lymphosarcoma. The blood examination, however, favored the former diagnosis (20,000 leukocytes per cubic millimeter, with 90 per cent lymphoid cells).

Histologic examination of the lesion on the vulva showed cutaneous and subcutaneous tissue, the surface of which was stratified squamous epithelium with a

few hair follicles. It was not ulcerated. Immediately beneath this and extending for some distance into the subjacent connective tissue there was a rather diffuse cellular reaction. In some areas the cells of this reaction were mainly lymphocytes, often accompanied by hypertrophy of reticulum cells. In other areas there were plasma cells or eosinophils or an admixture of both. The eosinophils, however, were usually in small numbers. In a few places the cells were nearly all plasma cells. The examination showed leukemic infiltration of the cutis and chronic inflammation of the cutis. There was a note that it was rather difficult to determine how much of this infiltration was leukemic and how much was due to chronic inflammation. The admixture of plasma cells and eosinophils was probably not a part of the leukemic process. The histologist was inclined to interpret the plasma cells and eosinophils in the specimen as due to inflammation.

DISCUSSION

DR. EUGENE F. TRAUB, New York: Unfortunately there were few lesions present for inspection today. The patient originally came in with what looked like erythema multiforme, and then an intensely itching vesiculobullous eruption developed which might have been mistaken for erythema multiforme or dermatitis herpetiformis. Such conditions have been previously reported. The roentgenotherapy she has received to the lymph nodes and to the skin has caused most of the lesions to disappear. The treatment was discontinued shortly before this meeting, but there is only one bullous lesion present on the arm today. One lesion showed leukemic infiltration; so I think in this particular patient the lesions of the skin were actual leukemic lesions and not leukemids.

Scleroderma Over the Right Pectoralis Muscle, Associated with Calcification of the Right Subdeltoid Bursa. Presented by DR. JOSEPH J. ELLER, New York.

L. B., an American saleswoman aged 43, one year ago had pain over the right subdeltoid bursa. A roentgenogram showed complete calcification. She received diathermy treatments. A roentgenogram of the bursa at the present time is normal. Five months ago she noticed a painless, whitish, hardened and thickened area of skin over the right pectoral muscle extending to the anterior axillary line. This area has gradually enlarged. When she was 2 years old a gland was removed from the right side of her neck, but the diagnosis is unknown. For several years the patient has been under an emotional strain due to financial reverses.

Examination shows a widely thickened plaque about 3½ inches (9 cm.) in diameter extending from the anterior aspect of the chest to the anterior axillary line. The skin is fixed to the underlying tissue. In the right axilla there are two small pea-sized movable tender nodes. The patient complains of intense pain in the right shoulder when the arm is moved in certain directions.

Chemical examination of the blood showed 11.7 mg. calcium and 3.4 mg. phosphorus per hundred cubic centimeters of blood. Urinalysis showed many epithelial cells, many mucous threads and a few leukocytes (probably contamination from vaginal secretions). A blood count showed 4,420,000 erythrocytes and 8,200 leukocytes per cubic millimeter and 75 per cent hemoglobin, with 6 per cent eosinophils. The basal metabolic rate was + 6 per cent.

Histologic examination (Dr. David L. Satenstein and Dr. Wilbert Sachs) showed the collagen bundles of the middle and upper parts of the cutis to be greatly condensed and arranged as a compact layer of bundles parallel to the surface. The elastic tissue was present throughout and similarly arranged as the collagen bundles. In part the elastic fibers were somewhat fragmented.

Radiation from a thin window lamp (Westinghouse) was used locally in erythema doses weekly. Thyroid extract was given orally, ⅛ grain (7.5 mg.) twice a day. The patient has been under treatment for the past four weeks, and the patch of scleroderma has become softer and thinner.

Amelanotic Melanoma. Presented by Dr. Frank C. Combes, New York.

R. S., an Austrian Jewess aged 50, a housewife, was previously presented at a meeting of the New York Academy of Medicine, Section of Dermatology and Syphilology, on Jan. 2, 1940, for diagnosis (Arch. Dermat. & Syph. **42**:175 [July] 1940).

The patient has had an eruption for seven months on the lower third of the right leg. It began as a half lentil-sized, brownish lesion which slowly enlarged. Three months after its onset, pinhead-sized, flesh-colored, elevated, semisolid satellites appeared within several inches of the first nodule. The lesions are for the most part discrete. A few have coalesced and become pigmented. Later the color deepens so that the mature lesions become bluish black. The visible metastases of the skin now number about sixty, being all below, lateral and medial to the original lesion from which a biopsy specimen was taken. There are no other lesions on the body. The right inguinal lymph nodes are palpable but not visibly enlarged.

A roentgenogram of the chest showed no metastases.

Histologic examination showed the upper third of the cutis, immediately beneath the epidermis, to be replaced by neoplastic cells arranged in solid sheets and clusters. Some of the cells were large and round; others were cubical, and some were spindle formed or three cornered. They contained large, pale nuclei. These were starlike cells with dendrites. Between these cells were a few spindle cells containing brown pigment. The main cells themselves did not contain pigment or mitotic figures. At one point there was an invasive projection of cells and some invasion of the lymphocytes. The histologic diagnosis was malignant melanoma (nonpigmented).

Treatment has consisted of 15,000 milligram hours of radium therapy to the affected areas. The lesions have flattened somewhat.

DISCUSSION

Dr. George C. Andrews, New York: I should like to ask whether pigment appeared in the lesions only after they had been irradiated. I had a case of amelanotic melanoma on the chin which after deep roentgenotherapy became heavily pigmented. Sometimes metastases from a pigmented melanoma do not show pigment clinically, and sometimes the metastases from a nonpigmented melanoma show pigment clinically. There seems to be no rule about it, but it does happen that pigment sometimes develops after roentgenotherapy in these lesions.

Dr. A. Benson Cannon, New York: I thought it was the general opinion that radiation was useless in the treatment of melanocarcinomas. The only form of treatment which offers any hope of relief or cure is surgical intervention. I should suggest removal of the extremity and resection of the regional glands.

Dr. E. William Abramowitz, New York: Such grave prognoses are always being expressed about these lesions. The other day I saw a woman who had had a melanoma removed from the back fifteen years ago. The lesion was excised widely; the surgical intervention was followed by radium treatment. She has remained well.

Dr. Joseph J. Eller, New York: I agree with Dr. Cannon that wide surgical excision is the proper treatment in this case, possibly followed later by irradiation.

Dr. George C. Andrews, New York: I feel the same way, that surgical treatment is the only kind for melanoma. The reason the patient I just mentioned was not treated surgically at first was that the lesion was about 1½ inches (3.8 cm.) in diameter and located on the chin, and it would have necessitated an extensive and mutilating operation, which the patient unfortunately had to have anyway. He is now free of the disease. The roentgenotherapy had little beneficial effect on the growth and only made it more difficult to remove later.

Dr. Frank C. Combes, New York: In answer to Dr. Andrews' first question, when this patient first appeared in the hospital she had about a dozen small

miliary to pinhead-sized nodules. They were flesh colored and glistened like vesicles, so much so that the clinical diagnosis suggested was that of lymphangioma circumscriptum. The diagnosis of melanoma was never entertained until the histologic examination was made. The pigmentation made its appearance long before radiotherapy was instituted. I agree with those who recommend surgical intervention in this case. I am not responsible for the treatment. The patient was transferred to the surgical department, and radiotherapy was recommended by the surgeons. If I recall correctly, she has an enlarged gland in the right groin, which does not improve the prognosis. The report of amelanotic melanoma was made by Dr. Symmers' laboratory on the histologic basis. I feel confident that if a biopsy were made now, plenty of melanin would be found in the tissue.

Melanocarcinoma Following the Treatment of a Common Mole. Presented by DR. MAURICE J. COSTELLO, New York.

A. W., a girl aged 18, was presented at a meeting of the Manhattan Dermatologic Society on Dec. 12, 1939 (ARCH. DERMAT. & SYPH. **42**:162 [July] 1940).

DISCUSSION

DR. DAVID BLOOM, New York: I have had the opportunity to observe this case from the beginning. From this and another similar case I have observed, I came to the conclusion that darkly pigmented plaques with downy hair which look infiltrated in the skin and are not well defined raised tumors above the skin should not be exposed to the effect of solid carbon dioxide or electrolysis but should be treated radically or not at all.

DR. FRANCIS A. ELLIS, Baltimore: I should like to ask Dr. Traub's opinion on this case, whether he thinks the growth originally was a common mole or whether it was a "junction type" nevus. Of course as there was no biopsy before it was first treated, I do not see how one can be certain which it was.

DR. H. FORD ANDERSON, Washington, D. C.: I think this case should be presented as one of "melanoma in spite of the therapy." I think the condition was probably a melanoma in the beginning, and I do not think the treatment had anything to do with the production of the melanocarcinoma.

DR. JOSEPH J. ELLER, New York: Surgical intervention must also be recommended in this case as the preferable treatment.

DR. MAURICE J. COSTELLO, New York: Before treatment this girl was presented at the Wednesday afternoon dermatologic conference at Bellevue Hospital. All present agreed that clinically the lesion was a common pigmented mole. She came to the dermatologic clinic, not because there was any change in the mole but because the lesion was a cosmetic defect of which she was becoming sensitive. It was removed in the manner stated, and the cosmetic result was excellent. A year later the pea-sized, bluish black, solid lesion which she now presents made its appearance. The report of the histologic examination then was a pigmented nevus. Because my clinical impression of the lesion was that of melanoma, I checked the histologic specimen and had two dermatopathologists and two general pathologists examine it. They agreed that it was a melanocarcinoma. I think this young woman presents a melanocarcinoma which followed the treatment of a common mole, as known clinically.

DR. EUGENE F. TRAUB, New York: This is a most interesting case that must be given serious consideration. The patient was seen by a number of able dermatologists, so that there cannot be much doubt as to the appearance of the original lesion. The unfortunate thing, however, was that no section of the original growth was examined microscopically, and so it must be assumed because of the presence of hairs that this was a common mole or intradermal nevus. While the presence of hairs is usually common with the ordinary mole and rare with a junction type nevus, a number of junction type nevi do show fine downy hairs, such as may still be seen at the margin of this lesion today. There seems

to be little question but that at the present time this patient has a malignant melanoma. According to the classification recently published (Traub, E. F., and Keil, H.: The "Common Mole," ARCH. DERMAT. & SYPH. **41**:214 [Feb.] 1940), the fact was stressed that the pure intradermal nevus did not terminate either as a cancer or as a melanoma, so far as could be determined. A mixed type was added, however, because not infrequently combinations of the various varieties were found. For example, one might see an intraepidermal nevus, an intradermal nevus or a junction type or any possible combination of the three. Had an original histologic examination been done in this case, the lesion would in all probability have fallen into this mixed type, because it presented some of the clinical attributes of an intradermal nevus but has terminated as to the junction type nevi. Numerous examples of such combinations have been seen, and if one can find an example, naturally it is reasonable to assume that many others can be brought to light on further search. It is probable that the long-continued treatment given this patient stirred up that portion of this nevus in which the activity was at the epidermodermal junction, with the resultant development of a melanoma. Until there is more definite information about the frequency of occurrence of these mixed types, even the most expert clinical knowledge does not warrant the assumption that one can always be right in clinically labeling a given lesion as a common mole or intradermal nevus. Therefore, I believe that when there is the slightest possible doubt, it is advisable to treat such lesions more radically than was done in this case and not subject the lesion to too much repeated irritation. This is one of several examples that I have now observed in which what appeared to be a benign pigmented nevus, treated with solid carbon dioxide, terminated in a malignant melanoma. Unfortunately in these cases it is generally difficult to find out the exact appearance of the original growth, and there has usually been no histologic examination made at the onset to determine what type the lesion is. I do not wish to leave the impression that all nevi with activity at the epidermodermal junction become malignant melanomas, but it is these lesions which may give rise to such a change.

Chronic Ulcer of the Back. Tumor of the Leg (Syphilis? Dermatitis Artefacta?). Presented by DR. J. GARDNER HOPKINS, New York.

R. S., an American aged 30, a typesetter, was previously presented for Dr. Frank E. Meleney at a meeting of the New York Dermatological Society on Nov. 28, 1939 (ARCH. DERMAT. & SYPH. **41**:952 [May] 1940). At that time he presented a huge wedge-shaped ulceration in the interscapular region measuring about 3 inches (7.5 cm.) across and 6 inches (15 cm.) in a vertical direction, the apex extending down to the tips of the spinous processes. It showed no decided improvement until the patient entered the hospital in January 1940. It has now healed, leaving a red contracted scar.

Histologic examination of the ulcer in 1939 showed necrosis and granulation tissue, with numerous giant cells. Tuberculosis or syphilis were considered as possible diagnoses.

The tumor of the right leg was not mentioned at the time of the previous presentation. In December 1939 pain developed along the medial border of the right foot, interfering with his sleep. It was not increased by standing or by pressure. This first called his physician's attention to the condition of the leg. The patient thinks that eight or nine years ago he hurt this leg while playing football and that since then it has been larger and distinctly harder than the left leg. He states it has changed little during this time. For an indefinite time he had noted numbness and paresthesia in the right foot, but he did not call his physician's attention to the leg until the pain developed. The mass in the right leg was explored, and a large mass of inflammatory tissue was found attached to the posterior surface of the interosseous ligament. A large portion of the mass was removed to relieve the pressure on the posterior tibial nerve.

At present there is still a hard mass lying in or beneath the right soleus muscle. There is complete anesthesia of the greater part of the sole and the inner side of the heel, corresponding to the distribution of the cutaneous branches of the posterior tibial nerve. There is paresthesia of the dorsum of the foot.

Wassermann reactions have been repeatedly negative. Roentgenograms of the bones of the right leg are normal.

Histologic examination of the mass removed from the right calf showed at the periphery striated muscle which was intensely involved in an inflammatory process. The central part showed dense collagenous tissue and vascular inflammatory tissue. There was infiltration largely of lymphocytes, with large mononuclear cells. There were many giant cells, some strongly suggestive of Langhans cells and others containing vacuoles and of a foreign body type. There were occasional polymorphonuclear leukocytes and small areas of necrosis. There were pseudotubercles, especially in the neighborhood of the small vessels. No organisms were seen in sections stained with Gram, Ziehl-Neelsen or Levaditi stains. Cultures showed scant growth of staphylococcus in forty-eight hours (not typical of tuberculosis, sarcoid or syphilis).

The ulcer on the back healed under recent treatment with staphylococcus bacteriophage and scarlet red. The patient has been treated for the past four weeks with a bismuth compound, arsphenamine and potassium iodide. The ulcer on the back was nearly healed before this treatment was begun. The mass in the right leg has not changed.

DISCUSSION

Dr. Bernard L. Kahn, Philadelphia: I should like to ask Dr. Hopkins what type of bacteriophage be used in this particular case. About nine years ago I treated 22 patients with pyoderma with bacteriophage (Kahn, B. L.: Bacteriophage Therapy for Pyoderma, Arch. Dermat. & Syph. **24**:218 [Aug.] 1931). With some varieties of bacteriophage (Swan-Myers) good results were obtained, while with others there was failure.

Dr. David Bloom, New York: I should like to ask Dr. Hopkins how much antisyphilitic treatment the patient has received. I have observed several cases of extensive and deep involvement, as in this case, in which the lesions were definitely gummas. Because of the great amount of necrotic tissue involved, it takes a considerable time to realize the effect of specific therapy.

Dr. Jacob H. Swartz, Boston: I should like to ask whether studies were made for the presence of anaerobic streptococci. In other words, did Dr. Hopkins consider the possibility of a symbiotic infection?

Dr. Maurice J. Costello, New York: I should like to ask if Dr. Hopkins looked for the microaerophilic streptococcus which Dr. Meleney has identified as the cause of lesions of this type. If that were found, a lesion of this size would probably not heal without complete surgical excision.

Dr. R. H. Rulison, New York: I attended the meeting of the New York Dermatological Society at which this case was presented, and the condition has certainly improved since that time. The suggestion was made then that it might be a symbiotic infection. In the history I note that the man has had, on the basis of some such investigation, a staphylococcus bacteriophage which caused almost complete healing of the ulcer.

Dr. J. Gardner Hopkins, New York: First, in regard to the question of anaerobic streptococci, the patient was originally sent to Dr. Meleney because of his published descriptions of that type of infection. Dr. Meleney thought that clinically the condition was not at all like the disease he has described, for one reason on account of the lack of undermining of the edges. However, he studied it carefully from that standpoint and did not recover anaerobic streptococci. Cultures showed staphylococci which were phage sensitive, and the patient was treated with bacteriophage. It is with that method of treatment that he has shown the greatest improvement. As to specific therapy, the picture is a little confused. After his presentation the patient continued treatment with bacteriophage, with

careful occlusive dressings, and the ulcer almost healed before specific treatment was started. Since that time he has had five injections of old arsphenamine and about ten injections of a bismuth compound. He also received potassium iodide until iododerma developed. The treatment with bismuth and arsphenamine has been continued since he left the hospital, but since his leaving the ulcer has again begun to break down. It appears that the antisyphilitic treatment has had no effect.

Necrobiosis Lipoidica Diabeticorum Without Diabetes. Presented by DR. EUGENE F. TRAUB, New York.

K. C., a woman aged 26, born in the United States, a receptionist, is presented from the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital, with an eruption of two years' duration. There is no history of diabetes or tuberculosis in the patient or in her family. In each instance, after a slight bruise, three areas developed on the left leg, and more recently, also apparently after bruises, several marks have developed on the left leg. The areas begin as inflammatory nodules, with the subsequent development of plaques.

Examination shows shiny yellowish brown or waxy plaques, with telangiectatic vessels at the sites of well developed lesions. Earlier lesions are indicated by inflammatory nodules. About the border there is a violaceous color.

The Wassermann and Kahn reactions were negative. The urine was normal. Chemical examination of the blood showed 65 mg. true dextrose (the normal value being 60 to 80 mg.) per hundred cubic centimeters. A sugar tolerance test showed no sugar in the urine while she was fasting, at the end of the first hour or at the end of the second hour; the values for the blood sugar were respectively 60 mg. during fasting, 65 mg. at the end of the first hour and 50 mg. at the end of the second hour per hundred cubic centimeters. Histologic examination showed a practically normal epidermis. There was swelling of the connective tissue fibers of the middle part of the corium. Between these and extending down to the hypoderm were islands of round cells, endothelial cells and giant cells of the Langerhans type.

Treatment has been symptomatic.

DISCUSSION

DR. FRANCIS A. ELLIS, Baltimore: I disagree with this diagnosis. The case reminds me of one I observed some years ago which I thought was a case of scleroderma-like changes with sarcoid, but the results of biopsy were pathognomonic of granuloma annulare. The patient was not diabetic, and the entire lesion healed with roentgenotherapy. I wish to suggest the diagnosis here of granuloma annulare. I think that the histologic section helped to confirm that diagnosis, while clinically the case is similar to the one I had. Were fat stains made?

DR. WILBERT SACHS, New York: In this section there was no granular degeneration whatever. There was perivasculitis and some swelling of the intima, so much so that the lumen of some vessels was almost entirely obliterated. Of course, with necrobiosis lipoidica one may find tubercle formation in different parts of the cutis. In this particular section there were no tubercules, but there were many giant cells and few or no histiocytes. The lack of histiocytes and lack of granular degeneration in no way give the appearance of granuloma annulare.

DR. JOSEPH C. BERNSTEIN, Baltimore: Some time ago I had occasion to study cases like this, particularly with reference to granuloma annulare (Bernstein, J. C.: Necrobiosis Lipoidica Diabeticorum [Urbach]: Comparison with Granuloma Annulare, ARCH. DERMAT. & SYPH. **36**:282 [Aug.] 1937). There happened to be in the series of patients with granuloma annulare 2 who also had diabetes. I think it is difficult and sometimes impossible to differentiate these two conditions both clinically and histologically. In my study I was fortunate to anticipate the histologic picture and made plans accordingly. In performing the biopsies I made frozen sections first (lipoid stains) to ascertain if the patients with granuloma annulare

and diabetes would show the presence of lipoids between and adjoining the collagen bundles, which is a pathognomonic finding. They failed to show this structure. On the other hand, the patients with true necrobiosis lipoidica diabeticorum did show lipoids between the collagen bundles. The type of cellular infiltrate is insignificant, and I do not believe a diagnosis can be made with the routine hematoxylin and eosin stain. Unless lipoid studies are made, it is impossible at times to differentiate the two entities. In this particular case the diagnosis is disputable. In the first instance, the patient does not have diabetes. Secondly, there are many conditions which cause degeneration of the collagen tissues, some of which are inflammatory, and in which one can find the picture which has been presented here today.

Dr. Fred D. Weidman, Philadelphia: I should like to register on the side of the diagnosis as presented. In cases of both granuloma annulare and necrobiosis lipoidica diabeticorum, there is necrobiosis. Of course, if one confines oneself to the item of necrobiosis, one is bound to get overlappings between the two diseases. In that dilemma, one can turn to other features, and in this particular case there are giant cells which I think are of the foreign body type. They indicate a reaction against the necrobiotic material, and, as far as I know, such a giant cell reaction against granuloma annulare has not been recorded. The matter of lipoidal degeneration I think is entirely incidental, just as in a tumor one part of the necrotic material may have undergone a further change, namely, fatty degeneration and another part may not have proceeded so far. At this juncture the matter of the arteriosclerosis is an important point. This patient is only 26 years old, but the endarteritis is marked. I do not think that the absence of diabetes should militate against the diagnosis of necrobiosis lipoidica, because, after all, whereas in the original series of cases diabetes might have been associated, there is now a notable accumulation of cases of such a dermatosis in the absence of diabetes. The criticism should lie rather with the original nomenclature; "necrobiosis lipoidica" should not have been saddled down with the necessity of being associated with diabetes. The disease might have been called "necrobiosis lipoidica arteriosclerotica," for example. That would also have included cases in which the arteriosclerosis is not diabetic.

Dr. J. Frank Fraser, New York: I should like to ask Dr. Traub whether the sections were stained with methyl violet.

Dr. R. H. Rulison, New York: Merely on clinical grounds today, I think this case is a classic one of necrobiosis lipoidica diabeticorum.

Dr. Eugene F. Traub, New York: I should like to call attention to the history of another case. The patient did not come today, but she has an advanced, even ulcerative, example of this disease, with no present evidence of diabetes, though she has a history of diabetes. As all the recent tests show no evidence of diabetes, I should have had to say it was a case of necrobiosis lipoidica diabeticorum without diabetes if the diabetes had not been discovered by accident a number of years ago. I believe this is an important point, because undoubtedly some patients who are supposedly not diabetic, if followed long enough, may show sugar and other symptoms of diabetes. In other words, the fact that some of the patients do not have diabetes when they are examined does not exclude the possibility that at some other time in their lives an excessively high sugar concentration may be present. Before attention was drawn to this syndrome, I had 4 cases, 3 of which I presented at various societies with various diagnoses of morphea with a tuberculoid structure or granuloma annulare or some similar diagnosis. I thought, because of both the clinical appearance and the histologic changes, that the condition was in some way related to tuberculosis. After this syndrome was described I reviewed the cases, and I have since made a report on them. They all fit in with necrobiosis lipoidica diabeticorum. None of the patients had diabetes, as far as I could discover. I followed some of them for three or four years. Of course, this is in line with Belote's recent article. I had a recent case which I thought might possibly be an example of necrobiosis lipoidica diabeticorum, but

it proved to be a case of granuloma annulare. I think this syndrome is not clean-cut or well understood yet, and I expect that perhaps something more may be discovered in the future about it. I suspect some of these conditions may be related to tuberculosis in some way. This patient and the other one who failed to come today were studied, and no evidence of tuberculosis was found in either one. However, I had a case of lupus vulgaris in which extensive grafts of skin were placed over the scalp, which took perfectly, but six months later if that area had been screened off and inspected any one would have seen a typical picture of necrobiosis. I suggest, therefore, that this possible relation to tuberculosis be studied further. In the case under discussion, special stains have been used and were reported by Dr. Barthel as showing characteristic changes seen in this disease. Therefore, there is histologic confirmation of the clinical diagnosis.

Fixed Eruption Due to Mapharsen. Presented by DR. MAURICE J. COSTELLO, New York.

Y. W. T., a Chinese man aged 39, was previously presented from Bellevue Hospital at a meeting of the Manhattan Dermatological Society on Nov. 14, 1939 (ARCH. DERMAT. & SYPH. **41**:943 [May] 1940).

DISCUSSION

DR. F. CORMIA, Montreal, Canada: I should like to make a suggestion in regard to treatment in this case. I have 2 similar cases in which the condition was caused by neoarsphenamine and recurred on attempts at subsequent therapy. In both cases I was able to resume the treatment with neoarsphenamine after having first fully saturated the patients with large doses of vitamin C intravenously. Curiously, patch tests in areas of previous dermatitis subsequently gave negative results. I have another case in which there was a previous generalized exfoliative erythroderma from arsenic, with a strongly positive reaction to a patch test. After one week of massive intravenous doses of vitamin C, 1,000 units daily, the reaction to a patch test was negative. I should think that possibly treatment with mapharsen might be resumed in this case following the massive therapy with vitamin C.

DR. E. WILLIAM ABRAMOWITZ, New York: I agree that this condition is a typical fixed eruption from mapharsen. There have been several cases reported. All of the arsenicals used in antisyphilitic therapy have been known to produce this type of eruption. The inorganic compounds like solution of potassium arsenite U. S. P. (Fowler's solution) and other inorganic compounds and some of the less complex organic arsenicals like sodium cacodylate and mercury salicylarsenate (enesol) have not been reported as producing a fixed eruption. Yet I should not be surprised if they would some day. In this case it is interesting that the author tried to show that phenolphthalein was responsible for this eruption. At one time it was said that phenolphthalein was the only drug that could cause this type of fixed eruption. Dr. Louis Chargin has a large series of cases of fixed eruption from the arsenicals. He has had some interesting experiences. He has given some of the patients phenolphthalein, and they have had not only a flare-up in the old patches but new fixed lesions. Those produced with phenolphthalein would flare up only with phenolphthalein, whereas the arsphenamine patch would flare up only with administration of arsphenamine. I am surprised to hear that one can obtain a positive reaction with this type of fixed eruption which belongs to the erythema group. Reactions to patch tests are usually positive in the eczematous type of drug eruption. I am skeptical about the efficacy of vitamin C and nicotinic acid in preventing such reactions, as so many other factors may be responsible. Originally, when Naegeli (*Cor.-Bl. f. schweiz. Aerzte* **47**: 1291, 1917) described fixed eruptions from arsphenamine, he said they were not a contraindication to further use of the drug. Epinephrine might prevent their occurrence. I tried it, and it did not work. These eruptions sometimes do not recur, even without anything being done to prevent them.

DR. A. BENSON CANNON, New York: I have never regarded a fixed eruption as a contraindication to the further use of arsphenamine, nor have I found it necessary to make any alteration in the treatment of syphilitic patients with arsphenamine.

DR. MAURICE J. COSTELLO, New York: Since the last date mentioned in the presentation this patient has been given an intravenous injection of 0.3 Gm. of neoarsphenamine; an erythematous halo appeared around the lesion in the popliteal space, but similar lesions around the mouth, eyelids and ear were not affected.

A Case for Diagnosis (Multiple Recurrent Disseminated Painful Ulcers).
Presented by DR. JOSEPH J. ELLER, New York.

S. P., an American aged 26, states that since 1932 he has had multiple ulcerations and deep subcutaneous abscesses scattered over the trunk, in the axillas, on the left forearm and on the legs. At times he has had an intermittent high temperature, but for the past four weeks the temperature has been normal. The patient has never been well. He was a premature infant and had feeding difficulties in infancy. Boils began to develop when he was 10 months old, and during his infancy he had three hundred and fifty boils. Tonsillectomy was performed at the age of 7. At 14 he had a mastoidectomy. In 1932, after a severe attack of Vincent's angina, all his teeth were removed. The patient had successive crops of boils throughout his childhood, but since 1932 they have assumed a different character and behavior. His diet has always been limited by his refusal to eat fresh fruits or uncooked vegetables. The patient's father had generalized eczematous ringworm, especially localized on the hands and feet and involving the nails. He also had a toxic adenomatous goiter and died suddenly, apparently of heart disease.

Examination shows a large, palm-sized, fairly well demarcated, superficial atrophic scar on the flexor surface of the left arm through which the veins can be seen. On the neck there are inflammatory nodes and scars similar to keloid acne. The abdomen is covered with superficial healed scars of various sizes. There are no active lesions present in this area. The back shows a similar involvement. The left thigh shows large serpiginous ulcerations, with a tendency to central healing. The right leg shows serpiginous plaques with central healing, some having a shiny atrophic surface. Other patches contain discrete reddish papules. There are many intradermal pustules on the lower part of the leg. The left leg and thigh show a similar involvement. The axillas show areas of scarring. The axillary and cervical lymph nodes are pea sized, firm, discrete and not adherent to the skin. The inguinal lymph nodes are marble sized and somewhat matted together.

The Wassermann reaction was negative. Blood complement fixation tests for tuberculosis and a blood agglutination test with Brucella abortus gave negative results. The urine was normal. Repeated blood cultures were negative, and the results of examination of the stool were normal. Chemical examination of the blood showed 130 mg. of sugar per hundred cubic centimeters. Blood counts showed 98 per cent hemoglobin and 4,630,000 erythrocytes per cubic millimeter, which at various times showed achromia, anisocytosis and poikilocytosis. The leukocyte count was 5,750 per cubic millimeter, with a differential count of 14 per cent polymorphonuclear leukocytes, 71 per cent lymphocytes, 6 per cent monocytes, 7 per cent eosinophils and 1 per cent basophils, all of which were normal in size and shape. The lymphocyte count has varied from time to time from normal to 71 per cent lymphocytes and 6 per cent neutrophils. Sternal puncture in 1937 was negative (at the time of puncture the count was 75 per cent polymorphonuclear leukocytes, 6 per cent monocytes and 9 per cent lymphocytes). Myelopoiesis showed normal maturation. A recent culture of blood taken during removal of tissue for biopsy showed a large amount of pure Streptococcus haemolyticus. Blood taken from the vein the next day showed no growth. Culture of a portion of

the biopsy specimen showed numerous fungi (the growth in the culture has not yet been classified).

Histologic examination of a specimen of skin showed the surface epithelium thickened in places. The corium showed a great increase in fibrous connective tissue, with areas of granulation tissue within which was a dense infiltration of chronic inflammatory cells. The cells were chiefly mononuclear, and many eosinophils were present. There was evidence of old hemorrhages, the pigment being phagocytosed by macrophages. The histologic diagnosis was chronic granulomatous inflammation of the skin with ulcerations.

Treatment has been varied. The patient received long courses of general irradiation with ultraviolet and roentgen rays to isolated regions. Cod liver oil and viosterol were given by mouth and liver and iron parenterally and orally. Staphylococcus toxoid, staphylococcus bacteriophage and mixed streptococcus and staphylococcus stock vaccines have been administered. He has had numerous local applications, including allantoin. All of these methods were without effect. Sulfanilamide, azosulfamide (neoprontosil, disodium 4-sulfamidophenyl-2′-azo-7′-acetylamino-1′-hydroxynaphthalene-3′,6′-disulfonate) and sulfapyridine were given a fairly thorough trial over a period of weeks, in small doses. Sulfapyridine seemed to help the lesions slightly. Brucella abortus vaccine given in several courses as a therapeutic trial seemed to bring about definite improvement, but this was followed by relapse. Eight small blood transfusions at weekly intervals were followed by the greatest improvement, in that all lesions disappeared from the trunk. However, ulceration on the buttocks and thighs continued without remission. The lesions recently have improved under the following regimen: bed rest, constant nursing care and applications of boric acid ointment. He is now receiving vitamins and brewer's yeast orally and compound solution of iodine U. S. P. intravenously. Since fungi have been found he is receiving 5 per cent aqueous solution of gentian violet to one leg. One area is now under treatment with zinc chloride cream.

DISCUSSION

Dr. Wilbert Sachs, New York: This case presents a most unusual clinical picture. According to a slide which I saw a little while ago, throughout the entire cutis there is organizing granulation tissue, and in the deep part of the cutis there is one isolated tubercle. I should of course hesitate to make any diagnosis on the presence of one tubercle or even on one slide, but I think I can rule out syphilis in this case. I suggest the possibility of some form of tuberculosis.

Dr. David Bloom, New York: I suggest the diagnosis of chronic ulcerative pyoderma, a condition which is seen in debilitated patients.

Dr. Max Scheer, New York: I should like to ask whether any examinations were made for the presence of Nocardia or any other of the family of Actinomyces.

Dr. Lee McCarthy, Washington, D. C.: I had the pleasure of observing a case like this with Dr. Fields several years ago. We were able to rule out amebic parasites and obtained staphylococci and streptococci. The patient's condition cleared up after six months with transfusions and acetarsone by mouth.

Dr. Joseph J. Eller, New York: In this case there were a profuse growth of Str. haemolyticus, which was not recovered from the blood at any time, and a profuse growth of fungi, which have not been identified when grown on agar. The patient has improved with hospitalization and nursing care. No examination was made for Nocardia.

Maduromycosis (Black Grain Variety). Presented by Dr. Paul E. Bechet, New York.

A. N., a man aged 67, born in the United States, is presented from Welfare Hospital, with an eruption of the right hand of seven years' duration. The patient states that he has never been outside of the immediate environs of the city of

New York. On Nov. 24, 1932 he was admitted to the Neurological Hospital, Welfare Island, suffering from arteriosclerosis, hypertension and cerebral thrombosis, which caused a mild paralysis of the extremities. On that day he fell and scraped his right hand along a wooden floor, thereby causing many splinters and particles of dirt to enter the skin of the hand. Since that time the swelling of the hand has increased progressively.

Examination shows the right hand to be greatly swollen and deformed. On the palmar surface, nodules, pustules and many sinus openings can be discerned. From these sinuses black grains are discharged of a fish-roe-like appearance. Some of the lesions resemble small cystlike, lentil-sized, violaceous to black spots; others appear pustular with black dots. The dorsum of the hand presents many cystlike swellings but no discharging lesions.

Direct examination of crushed granules revealed a tangled mass of mycelia which were septate. Dr. George M. Lewis, in whose service the patient was originally, succeeded in cultivating a species of Hormodendron, which has not apparently been previously reported in the black grain variety of maduromycosis. Further investigation of this fungus and its relation to maduromycosis is under way. Repeated roentgenograms of the hand showed no involvement of the bones. The Wassermann reaction was negative. The results of urinalysis and complete blood count were normal.

Histologic examination showed acanthotic epithelium, which contained dense nests of inflammatory exudate with some attempt at nodule formation. These inflammatory nests consisted of lymphocytes, plasma cells, histiocytes and small giant cells. The giant cells were circular and contained from three to eight nuclei which were evenly dispersed throughout the cytoplasm. The periphery of the exudates consisted of collections of xanthoma cells. The nests of cells were surrounded by dense connective tissue capsules. The connective tissue of the corium was condensed, thickened, hyalinized and irregularly dispersed by the inflammatory exudates. There was considerable endarteritis.

The patient is taking 390 minims (24 cc.) of a saturated solution of potassium iodide daily. No signs of iodide intolerance have as yet been noted. There has been no gastric upset. The patient's digestion is normal and his appetite good. There has been a definite improvement since iodide therapy has been instituted.

DISCUSSION

DR. GEORGE M. LEWIS, New York: There are two types of lesions. The palm shows discharging sinuses, from which dark amorphous-appearing granules could be obtained, and on the dorsum of the hand are discrete, firm, subcutaneous swellings. Histologic examination showed black granules in the substance of these lesions on the dorsum of the hand. The mycologic study is still in progress. The exact classification of the causative fungus is not yet certain, but it has been tentatively classed as Hormodendron pedrosoi (Brumpt 1921), which resembles Phialophora verrucosa.

DR. FRED D. WEIDMAN, Philadelphia: On the whole, clinically this condition resembles more a mycetoma than it does chromomycosis. Generally, with chromomycosis there is a verrucous dermatitis. However, there is a notable accumulation of cases in which that has not been true; when the disease occurs on the upper extremities, it is not likely to be a verrucous dermatitis. Therefore, the way is still open for this condition to be classed as chromomycosis, provided the mycologic examination shows that one of the chromomycotic species is finally determined. The "naked eye" appearance of the culture is strikingly like the species of chromomycosis fungus isolated in Texas, Phialophora verrucosa. I might say, incidentally, that the first case of chromomycosis in the United States was observed by Dr. C. Guy Lane of Boston and that the original description of Phialophora verrucosa came through his efforts. The appearance in the sections is not that of chomomycosis. The festooned way in which the fungus substance is arranged is like that of maduromycosis, and the "spores" are also more like those of

maduromycosis. The cells in chromomycosis are large, have a double contour and exhibit pseudobudding. Therefore, there is here a conflict between several important items in deciding between mycetoma and chromomycosis, which can scarcely be decided until the identity of the parasite is finally determined.

DR. C. GUY LANE, Boston: Unfortunately I did not happen to observe this particular case. I was interested in the photographs. The palmar lesions show no resemblance and the lesions on the back of the hand show little resemblance to those in the case from which the Phialophora verrucosa was cultured originally some years ago. In that case there were three or four lesions alone on the buttocks. In the discharge of one of these lesions there were found some curious organisms. Later a whole lesion was removed, about 1 to 1.5 cm. in diameter, and from that the cultures were obtained. That particular lesion looked more like an early lesion of verrucous tuberculosis. The purplish color with no great amount of pigmentation, perhaps not any more than is met in that particular person, gave that impression. The lesion healed after excision, and there was no recurrence.

Reticuloendotheliosis; Mycosis Fungoides (?). Presented by DR. HERMAN SHARLIT, New York.

M. G., a Polish man aged 50, a blacksmith, is presented from the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital, with an eruption of two years' duration. The eruption involves the entire body except the hands and the penis. It is reticulated, brownish and scaly, with numerous telangiectatic areas. There is decided lichenification, especially of the neck. The mucous membranes are comparatively free. There are many depigmented areas inside reticular lesions. On the neck and elbows there are islands of clear areas. The patient gives no history of ingestion of drugs.

The urine was normal. Examination of the urine for arsenic gave negative results. The Wassermann and Kahn reactions were negative. The blood count was normal. Histologic examination was reported as "reticuloendotheliosis, possible mycosis fungoides." In a few areas the epidermis was slightly acanthotic and disorganized, and in the upper part of the cutis an infiltrate of round cells and histiocytes was noted. The cells were of different sizes and shapes. A fine reticulum was present as well as pigment.

DISCUSSION

DR. A. BENSON CANNON, New York: I do not know of any condition except lichen planus which will leave such extensive pigmentation, and this patient has innumerable lesions that are characteristic of this disease. I have found closely studded, discrete, flat-topped, violaceous, striated, shiny, pinhead-sized to millet seed-sized papules all over the body and extremities, with some linear lesions. On the elbows and outer surfaces of the arms I noticed a number of annular lesions from 0.5 to 1 cm. in diameter that were in every respect typical of lichen planus. I have never observed an example of mycosis fungoides which even remotely resembled this condition.

DR. WILBERT SACHS, New York: The presence of a fine reticulum and many histiocytes would definitely rule out lichen planus and would be much in favor of the diagnosis as presented.

DR. HERMAN SHARLIT, New York: Naturally the suggested diagnosis of mycosis fungoides in this case could have been based only on the cytologic examination of a section. It would appear evident from the many cases presented here this afternoon with the tentative diagnosis of mycosis fungoides that there is no correlation between clinical pictures and this cytologic diagnosis. It would be well to realize that the diagnosis of mycosis fungoides is always one of cytologic changes, and this cytologic picture evidently occurs frequently in a group of clinical conditions. Only in the unusual instance does this condition in its clinical

evolution lead to tumor formation and death. For this reason the histologic diagnosis of mycosis fungoides can have prognostic significance only in terms of the clinical picture. In my experience, generalized eczema due to external irritants is the most frequent cause of the production of the cytologic picture of mycosis fungoides. In this case I should be inclined clinically to agree with Dr. Cannon, but the histologic picture does not bear out this diagnosis.

A Case for Diagnosis (Pemphigus?). Presented by DR. EUGENE F. TRAUB, New York.

I. M., a man aged 46, presented from the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital, was presented at a meeting of the New York Dermatological Society in November 1934, in February 1935 (ARCH. DERMAT. & SYPH. **32**:978 [Dec.] 1935) and on Oct. 24, 1939 (ibid. **41**:788 [April] 1940).

Despite all types of therapy, the disease has been slowly progressive with practically only the slightest of remissions. He still presents numerous irregular, ragged ulcerations on the buccal mucosa, the tongue and the roof of the mouth. Crusted lesions appear on the lip, the nose and about the eyebrows.

DISCUSSION

DR. JOSEPH V. KLAUDER, Philadelphia: I believe this patient has pemphigus of the mucous membranes, including the conjunctiva (ocular pemphigus). This diagnosis can be made definitely if it can be established that the lesions in the mouth are vesicles. He does not present any vesicles now, and he is unable to tell me if vesicles appear in his mouth. With poor illumination I saw what I thought were scars on the buccal mucosa and on the hard palate. Obliteration of mucous surfaces with scar formation is characteristic of pemphigus of the mucous membranes. This is most commonly seen in the nasopharynx, causing partial obliteration. I have seen atresia of the vagina resulting from the disease. Involving the conjunctiva the disease is characterized by a subconjunctival inflammation which is progressive, causing symblepharon, obliteration of the cul-de-sacs and adherence of the eyelids to the bulb. The conjunctiva over the cornea is transformed into a parchment-like membrane, with resulting blindness. This obliterating pathologic process involving all mucous surfaces and preceded by recurring vesicular eruption constitutes the concept of pemphigus of the mucous membranes of which conjunctival or ocular pemphigus is one phase. The disease may be confined to the mucous membranes, with or without conjunctival involvement or blebs on the skin.

I note the conjunctivas of both lower lids are reddened and thickened, and the bulbar conjunctiva of both eyes in the lower portion is redundant and can be wrinkled. This is characteristic of the early stage preceding symblepharon and obliteration of the cul-de-sacs. In a consistent way, he states, his eyes become inflamed, with symptoms of conjunctivitis. He also states that at times he notices blood in his handkerchief, which I believe is evidence of vesicular lesions on the nasal septum which rupture, leaving erosive areas which ooze blood.

I suggest examination of the mucous surfaces of the urethra and anus and observation to note the occurrence of vesicles in the mouth.

This disease represents a benign form of pemphigus. Vesicles in the mouth usually appear and disappear over many years. In one of my patients they appeared at intervals for eighteen years. This patient has been under my observation for nine years (ARCH. DERMAT. & SYPH. **27**:718 [April] 1933; **37**:364 [Feb.] 1938; 687 [April] 1938; **42**:228 [July] 1940). According to my abservations, the disease pursues the same course in Jews.

DR. M. H. GOODMAN, Baltimore: I do not think the type of lesion which presents itself on the skin is sufficiently accounted for. I feel, with a little hesitancy, that Darier's disease of the mucous membranes should be ruled out, in view of the fact that the cutaneous lesions, with their peculiar small papular

appearance, crusting and history of coming and going for a period of ten years, should be taken into consideration. Darier's disease should, at least, be ruled out by histologic examination. The examination should be done, I think, by a dermatohistopathologist.

DR. EUGENE F. TRAUB, New York: There were four sections of skin removed for diagnosis, three from the mouth and one from the upper lip. I did not present them here because each showed simply an "inflammatory nodule." The interesting thing about this patient is that he has been under constant observation for about ten years, which is an unusual circumstance in New York. About seven years ago I told him that I thought he had pemphigus, and but little change has taken place since then. Especially since the lesions have been almost entirely confined to the mucous membranes, I am surprised that nothing further has happened. I trust that Dr. Klauder's interpretation is correct. If this case proves to be one of pemphigus, it is the most slowly progressive one, especially considering that the condition began on the mucous membranes, that I have been able to follow.

Naevus Pilosus. Presented by DR. GEORGE C. ANDREWS, New York.

R. O., an American girl aged 14, is presented from the Vanderbilt Clinic. At birth the patient had a pigmented hairy nevus involving the left malar region, extending beneath the left eye to the bridge of the nose and into the left eyebrow. At the age of 3 months treatment was started with solid carbon dioxide, first being applied to the nonhairy edges of the nevus. Exposures of fifteen to thirty seconds were given at two to four week intervals, the last treatment being in February 1931. At that time the color had practically cleared but the hairs remained. Epilation was started in November 1938. The patient has received fifty-two treatments by electrolysis.

Cavernous Hemangioma of the Left Inner Canthus. Presented by DR. GEORGE C. ANDREWS, New York.

M. R. K., a Russian girl aged 19 months, is presented from the Vanderbilt Clinic. The lesion was present at birth. When she was examined at the age of 3 months, there was a cavernous swelling on the left inner canthus, measuring 1.5 cm. in diameter. At the lower border there was a bright red elevation 5 mm. in diameter. Pressure of the mass resulted in narrowing of the inner part of the palpebral fissure.

Thirteen injections of half strength quinine hydrochloride and ethyl carbamate (urethane) were given at two to four week intervals in doses of 3 to 5 minims (0.2 to 0.3 cc.). The last treatment was given five months ago.

Cavernous Hemangioma of the Eyelid. Presented by DR. GEORGE C. ANDREWS, New York.

R. F., an American girl aged 2½ years, is presented from the Vanderbilt Clinic. The lesion was present at birth. When she was examined at the age of 2 months there was a red elevated mass on the left lower eyelid, measuring 6 by 18 mm.

The angioma was injected with half strength quinine hydrochloride and ethyl carbamate (urethane) at two to four week intervals. Ten injections were given, the last one eleven months ago.

The object of presenting these cases is to show that if one uses solid carbon dioxide and uses it lightly without producing ulceration, one can do so without producing a scar. I believe that radium used near the eye in infants and children is a dangerous procedure. Angiomas near the eyes should be treated by injection of sclerotics, plastic surgery or the application of solid carbon dioxide. I believe that the best cosmetic result is obtained by the injection of a sclerotic or by plastic surgery.

Blastomycosis. Presented by DR. GEORGE M. LEWIS, New York.

A. A., an Italian aged 46, a baker, is presented from New York Hospital. He was born in Italy and came to the United States in 1907. The eruption was first noticed in 1922, while he was working for a railroad in West Virginia. The eruption began on the left side of the chest and spread gradually. The correct diagnosis of blastomycosis was made for the first time when he was in Italy in 1932. While he was there the eruption responded well to iodide therapy, but it recurred promptly on his return to this country in 1933. He has had roentgenotherapy, potassium iodide in large amounts, sodium iodide intravenously, arsenic, salves and sulfanilamide, without more than temporary improvement. There is always some improvement when some form of iodide therapy is given.

Examination shows lesions on the anterior part of the chest, left shoulder and axilla, entire back of the neck, right side of the chin, right upper lip, nose, periorbital regions, right temporofrontal region, right ear and right temporal and right occipital portions of the scalp. The lesions are of two types: (1) old burned-out areas where the skin is in places thin and atrophic and in other parts thickened and fibrotic, as in the left axilla and in the neck (resulting in limitation of movement); (there is some atrophy of the muscles of the neck due to disuse, and telangiectasia is present); (2) in the active disease, plaques of varying size, which are elevated and verrucous, moist on the surface and covered with greenish brown crusts. The largest lesion is on the back, almost centered, with smaller lesions on each side. The periorbital region is involved and besides the active verrucous crusted lesions in this location, as well as on the nose and other parts of the face, there is an ectropion of both upper and lower eyelids on the right side, exposing the conjunctival surfaces completely to the air. The patient is unable to close the lids, and there are reddening and swelling of the subconjunctival tissues and a constant overflow of tears. The scalp shows superficial, exudative lesions, covered with crusts.

Blastomyces dermatitidis was demonstrated in scrapings from lesions and in cultures. There was moderate leukocytosis. The test with blastomycin showed a positive reaction. The Wassermann reaction was negative, as were the results of other routine tests. Histologic examination showed the epidermis to be decidedly irregular, acanthotic and containing numerous small abscesses. The surface was covered with crusts. In places there were pseudoepitheliomatous changes. There was a good deal of granulation tissue, with many new blood vessels, plasma cells, small round cells and giant cells. Blastomycetes approximately the size of macrophages could be seen both in the epidermis and in the upper part of the cutis.

Recent treatment has consisted of (1) sulfapyridine (total dose of 65 Gm.) from Jan. 10 to Feb. 2, 1940, which caused a flare-up of the condition; (2) intensive iodide therapy from February 5 to February 17, with improvement; (3) thymol from February 20 to date, increasing up to 4 Gm. daily, with apparent improvement, and (4) aqueous gentian violet used locally with grease occasionally to soften the crusts.

DISCUSSION

DR. J. LAMAR CALLAWAY (by invitation), Durham, N. C.: In view of the fact that the intradermal blastomyces reaction is positive in this case, I suggest that the patient be desensitized with an autogenous vaccine prepared from his culture. It has been my experience with patients who have blastomycosis that they do not respond to iodides until they have been desensitized to their own organism.

DR. J. H. SWARTZ, Boston: Has this patient had any pulmonary symptoms? Have any examinations of the chest been made?

DR. GEORGE M. LEWIS, New York: Roentgenograms of the chest were normal. Since the history was written I have attempted to demonstrate agglutinins and precipitins, but without success. In a further study of the autogenous vaccine,

I diluted it with the patient's own serum and found it made no difference in the cutaneous reactions which could be elicited. I am familiar with the work of D. S. Martin and D. T. Smith at Duke University, who reported a series of cases of blastomycosis (Blastomycosis: A Review of the Literature, *Am. Rev. Tuberc.* **39**: 275 [March] 1939; A Report of Thirteen New Cases, ibid. **39**:488 [April] 1939). They found that after desensitizing the skin to blastomycin, the therapeutic response was better to iodide therapy. They also mentioned that it might be dangerous to give iodides to such patients without first desensitizing the skin to blastomycin. This patient was given iodides in doses as high as 600 grains (39 Gm.) a day and over long periods without any evidence of exacerbation of the lesions. While I was successful in curing an area by curettage followed by application of gentian violet, the surgeons refused to undertake extensive curettage under anesthesia. At the present time the patient has just completed two weeks' treatment with thymol, and it is of interest that he was able to tolerate a dose of 4 Gm. a day without symptoms. The usual dose is from 0.5 to 2 Gm. a day. There seems to be more improvement from thymol than from any other form of therapy which he has had.

Pachyonychia Congenita. Presented by Dr. Anthony C. Cipollaro, New York.

J. P., an American boy aged 12 years, is presented from the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital. His mother says that the patient was born with deformed nails. The changes in the oral mucous membranes and the skin occurred soon after birth and have gradually increased in severity.

Examination shows on the inner surfaces of the lips and cheeks and on the dorsum of the edges of the tongue, dull whitish gray patches, irregular in shape and slightly elevated. In some places the patches have an irregular surface, somewhat suggestive of a verrucous condition. These leukokeratotic patches show no signs of malignant degeneration. The nails of both hands and both feet are abnormal. They are yellowish brown, distorted and hyperkeratotic. The nails are hard and oversized, as in cases of onychogryphosis. The skin shows the following changes: On the mesial surfaces of both great toes are areas in which there are sharply demarcated patches of denuded skin. These areas are glistening and show little tendency to heal and are gradually progressing peripherally. On the outer side of the right foot, just below the external malleolus, there is a similar patch measuring approximately 7 by 3 cm. The skin as a whole is dry. On the external surfaces of both arms, there are many fine keratotic lesions. Verrucae of varying sizes are present on the tips of the elbows and the extensors of the forearms.

The Wassermann and Kahn reactions were negative. Cultures from the tongue for fungi were negative.

Treatment has consisted of topical applications.

DISCUSSION

Dr. A. Benson Cannon, New York: I agree with the diagnosis in this case. I should like to call attention to the lesions of the mucous membranes that so closely resemble the condition that I described a few years ago as white sponge nevus of the mucous membranes of the oral cavity, vaginal mucous membranes and anus (Cannon, A. B.: White Sponge Nevus of the Mucosa [Naevus Spongiosus Albus Mucosae], Arch. Dermat. & Syph. **31**:365 [March] 1935). The only difference that I can note in this patient's lesions of the mouth from the condition in my patients is that they had sievelike, clear, hyaline, discrete, raised, pinhead-sized areas in the white spongy parts that resembled vesicles. Their disease was congenital and appeared in three different generations of the same family. Since publication of the history of those cases, I have studied two

other family groups with the same condition, no member of either group having any other defect.

DR. DONALD M. PILLSBURY, Philadelphia: I agree with the diagnosis as presented. In connection with this case, I recall a report by Goldberg (Goldberg, S. C.: Resistant Erosive Lesions in Pachyonychia Congenita of Jadassohn; Treatment with Buffered Cysteine Hydrochloride, ARCH. DERMAT. & SYPH. **36**:331 [Aug.] 1937), in which ulcerated lesions in a case of this disease healed after applications of cystein hydrochloride to promote epithelization.

DR. GEORGE C. ANDREWS, New York: There are reasons to believe that this condition is a variant of Darier's disease, keratosis follicularis. Papules develop on the extremities which are indistinguishable from the lesions of Darier's disease.

Naevus Cerebriformis (Cerebelliformis) of the Scalp. Presented by DR. ELLWOOD C. WEISE, Bridgeport, Conn.

H. F., a woman aged 24, a private patient, is presented with a large nevoid process involving the scalp since birth. On the scalp, beginning about 9 cm. back of the front hair line and extending transversely over the scalp from ear to ear and from thence backward, involving the entire vertex, occipital and suboccipital regions, is a large pinkish, irregularly convoluted mass, 25 by 25 cm., practically devoid of hair except from the depths of the sulci between the convolutions where a fair amount of hair arises to provide a partial covering for the tumor mass. The convolutions are irregular and unusually large, as evidenced by the lowermost transverse convolution in the suboccipital region, which hangs down in an almost apron-like effect and measures 25 cm. from side to side, its width being 4 cm. and its depth over 5 cm. The borders of the lesion arise almost precipitously from what appears to be normal skin of the scalp anteriorly and normal skin of the neck posteriorly and at the sides as well. The patient's mentality is average or above. There is a somewhat foul odor present. There is no familial history of similar tumors. The patient's daughter, however, presents a small naevus flammeus of the left forearm.

The histologic report was as follows: The sections of a cutaneous tumor showed atrophic epidermis. A moderate hyperkeratosis was present. Large sebaceous glands could be seen. The stroma of the tumor showed marked fibrosis. It contained numerous dilated thin-walled vessels. In the upper portions of the stroma were numerous polygonal cells arranged in nests. These were typical nevus cells. Here and there could be seen pigment-containing cells. A few chromatophores were noted. Mast cells were scattered throughout the section. The deeper portions of the growth showed connective tissue which contained numerous bundles of spindle-shaped cells. Here the growth suggested the picture sometimes interpreted as a neuroma. Most of the cells, however, appeared to be spindle-shaped nevus cells. The histologic diagnosis was nevus pigmentosus (Dr. Gerald F. Machacek).

DISCUSSION

DR. ELLWOOD C. WEISE, Bridgeport, Conn.: This case was presented principally for two reasons. One was because of the large size of the nevus and the other was for suggestions as to treatment. The case was primarily that of a surgeon and was referred only recently to me for an opinion. I have seen only a few cerebriform nevi which might approach the size of this one. Aside from the size of the lesion and its appearance, there is an odor from it, and it is objectionable to the patient on this account. She is only 24 years old and is anxious to have the lesion removed. The question in the mind of the surgeon is whether to remove it in one stage, followed by skin grafting, or to do so in several stages, performing a partial excision of one quarter of the lesion at one time, drawing the edges together for suturing if the tissues permit and eventually removing the entire lesion in stages in this fashion. It is surprising how little one can find in the dermatologic textbooks or literature on this subject.

It is hardly mentioned. However, there is a splendid article dealing with this subject by Hammond and Ransom (*Arch. Surg.* **35**:309 [Aug.] 1937). I should like to know if any of the members here have had any experience removing a nevus of this type and of this size and whether it should be done in one or several stages.

DR. WILBERT SACHS, New York: I have just written an article for the ARCHIVES on this condition (Sachs, W., and Sachs, P. M.: Turban Tumors, ARCH. DERMAT. & SYPH. **42**:15 [July] 1940). All types of nevi, such as epidermal nevi, cutis or dermal nevi, may be found in the same specimen. One must be careful that there are no junction type nevi (melanoma or forerunner of nevocarcinoma) in the specimen. In 1 case such a nevus was found, and when the growth was removed, numerous metastatic lesions of nevocarcinoma developed and the patient died.

DR. JOSEPH V. KLAUDER, Philadelphia: The lesion in this patient is comparable in size and depth to the one involving the side of the face of a patient whose photograph is in my paper "The Treatment of Nevi with Particular Reference to High Frequency Current" (*J. A. M. A.* **90**:1763 [June 2] 1928). I believe the choice of treatment of this lesion is by electrodesiccation. I advise such treatment under general anesthesia in three stages. At the onset of destruction I should select bipolar electrodesiccation, changing to unipolar as one approaches the level of the skin. When the operative area of the first destruction is almost healed, I would then perform the second destruction. With this technic I doubt if skin grafts will be necessary. They were not for the patient aforementioned. Roentgenotherapy of the scarred area, if keloidal, will be necessary. I believe the only cosmetic defect will be the absence of hair, for which a wig could be worn.

DR. MAX SCHEER, New York: I recall a patient at the clinic several years ago who had an extensive nevus of this type on the back, much more extensive than this one. Part of the lesion was removed by electrodesiccation, and in the desiccated area a nevocarcinoma developed, which later metastasized to the glands.

DR. A. BENSON CANNON, New York: I can see no indication for removing the nevus that she has had all of her life and which has not handicapped her to any great extent. I do not believe that it is possible to remove the nevus surgically without destroying the greater part of the scalp, and probably this would leave a more disfiguring condition than is now evident.

CHICAGO AND DETROIT DERMATOLOGICAL SOCIETIES

HERBERT RATTNER, M.D., *Chairman*

Joint Meeting, Ann Arbor, Mich., March 17, 1940

Presentation of all cases at this meeting was made by Dr. Udo J. Wile, Ann Arbor, Mich., with the exception of those by Dr. H. L. Keim, Detroit, and Dr. Wile; Dr. A. E. Schiller, Detroit, and Dr. Wile; Dr. H. J. Parkhurst, Toledo, Ohio; Dr. Loren W. Shaffer, Detroit, and Dr. C. A. Doty, Detroit.

Primary Tuberculosis of the Skin.

R. D., a white man aged 44, first noticed a red, nonpainful, nonfluctuant papule beneath the left eye three months ago. There was no preceding injury. Four weeks later there developed at the angle of the left jaw a painless swelling, which rapidly increased in size. The patient has been a bartender for eleven months, and the man with whom he works is said to have a tuberculous lesion of the throat. The patient has done no hunting and has not come in contact with rabbits. There has been no exposure to syphilis, so far as he knows.

Examination on Feb. 9, 1940 revealed a well developed and nourished man, who did not appear ill. On the cheek, 1 inch (2.5 cm.) below the left eye, there was a pea-sized, indurated, nontender, erythematous papule, covered by a thin crust. Anterior to and below the left ear were two groups of glands, the capsules of which appeared to have fused, forming hard, nontender masses fixed to the underlying tissue. There was no fluctuation. The overlying skin was not attached. There were no draining sinuses.

Dark field examination of tissue from the lesion below the eye gave negative results. Serologic tests gave negative results on three occasions. A roentgenogram showed no signs of old or new tuberculosis. Direct examination of the bloody suspension obtained from a puncture of a gland showed no acid-fast bacilli. The tuberculin test showed strong reactions in twenty-four to forty-eight hours (with a dilution of 1:1,000,000). The result of an agglutination test for tularemia was negative. Direct examinations and cultures for sporotrichosis, actinomycosis and blastomycosis gave negative results. The blood count was normal except for evidence of mild anemia. Culture of material for tubercle bacilli and inoculation of guinea pigs have given negative results to date.

DISCUSSION

DR. GEORGE H. BELOTE, Ann Arbor, Mich.: The photograph was taken about three weeks ago; the lesion was considerably larger than it appears now. Also, the adenitis is prominent in the picture; the enlargement of the glands has decreased about 50 per cent. This case, I confess, was a surprise to me—more, I think, on account of the patient's age than for any other reason. I have had the belief that the so-called primary tuberculosis complex is likely to occur in children, usually in very young children. A study of the literature, however, showed a considerable number of cases in adults; so age does not rule out the disease in this case.

When this patient was admitted to the hospital, I thought that he had a primary syphilitic sore, but laboratory studies failed to substantiate that diagnosis. The only positive evidence is the patient's abnormal sensitivity to tuberculin. It is interesting that he shows no roentgenologic evidence of either new or old tuberculosis. The location of the lesion is the same as that in most recorded cases, either with preauricular or submaxillary adenitis. On diascopic examination of the primary lesion the diagnosis can be made, even though the lesion has now healed.

Lupus Vulgaris of the Cheek.

M. L., a white woman aged 28, first noticed a small lesion on the left side of the face in 1938. By January 1939 this had increased to the size of a dime. From July to December 1939 the patient received nine treatments with roentgen rays, with little benefit. She has had pulmonary tuberculosis since 1938. Although the process has now been quiescent for the past nine months, she is still a patient at the Wm. H. Maybury Sanatorium, Northville, Mich.

The patient was first seen at the University Hospital on Jan. 16, 1940, when she presented a single lesion in the left malar region. This was circular and measured 2 cm. in diameter. It was made up of numerous pinhead-sized, flat, dully erythematous papules on an erythematous, moderately infiltrated base. On diascopic examination these papules appeared light brown.

The urine showed a trace of albumin. A complete blood count was normal. Examination of the sputum showed no tubercle bacilli. The pleural fluid showed tubercle bacilli in July 1939. The Kahn reaction was negative. No tissue was available for histologic study.

Treatment with water-cooled ultraviolet radiation has been given with a quartz-mercury vapor lamp (a Burdick lamp, with an output of about 1 erythema unit per second), with 50 erythema units on Jan. 16, 1940 and 60 erythema units on February 28. There has been a good response to this treatment, the lesion now being reduced by more than one half.

Lupus Vulgaris of the Nose.

G. B., a Negro girl aged 12 years, has had a chronic sore on the nose since she was 7 years of age (1935). In 1936 she received twenty-five injections of gold sodium thiosulfate, together with sixty-nine treatments with air-cooled ultraviolet radiation, with some improvement. During 1938 and 1939 she received a total of twenty-five roentgen ray treatments, with little benefit. She was first seen in the University Hospital on Feb. 15, 1940.

The patient presents a destructive granulomatous lesion involving the nose, cheeks and upper lip. The distal portion of the nose has been destroyed, leaving an ulcerated, heavily crusted surface. The lesion extends out on each cheek, where definite nodules and papules are present. The left nostril is stenotic. The process extends into the right nostril about 1 cm. The larynx shows involvement, and the diagnosis of lupus of the larynx was made by members of the department of otology.

In 1937 she apparently had pulmonary involvement. Present roentgenograms show no sign of parenchymal lesions, though a fairly large, partially calcified tuberculous gland is present at the upper pole of the hilus of the left lung.

The urine was normal. The blood count showed 72 per cent hemoglobin and 4,300,000 erythrocytes and 4,900 leukocytes per cubic millimeter, with a differential count of 78 per cent neutrophils, 19 per cent lymphocytes and 3 per cent monocytes. The Kahn reaction of the blood was negative.

Treatment has been started with water-cooled ultraviolet radiation given through a quartz applicator with pressure (a Burdick lamp, with an output of about 1 erythema unit per second). On Feb. 19, 1940, 50 erythema units was given to all areas not encrusted; on February 29, 50 erythema units was given, and on March 7, 80 erythema units. There has been good response to this therapy.

Lupus Vulgaris.

A. E. W., a man aged 53, was first seen in 1934, at which time he said that eight years previously he began to notice the lesions on the lower lip. In spite of local medication, ultraviolet irradiation and twelve intravenous injections of a gold compound, the lesions spread to involve the nose, forehead, cheeks and neck, with destruction of tissue. He had been taking care of his wife, who had died of pulmonary tuberculosis eight years before. He was never aware of having pulmonary tuberculosis himself.

Physical examination revealed that the forehead, lips, cheeks, nose and mucous membranes of the mouth and nose were the sites of active lesions, while scars marked the sites of previous lesions on the neck. The active lesions were granulomatous, slightly elevated and covered with scales and crusts. The borders were well defined and serpiginous in places. Central atrophic scarring was present here and there. The lungs were clear.

Curettage and cautery resulted in the healing of some of the lesions. During the past year water-cooled ultraviolet radiation given with pressure has brought about considerable healing of the lesions.

Kahn reactions of the blood were negative. A stereoscopic roentgenogram in April 1939 revealed a calcified, localized and inactive lesion in the apex of the left lung. A roentgenogram of the spine taken in February 1940, on account of the patient's complaint of backache, showed moderate destruction of the intervertebral space between the fourth and the fifth lumbar body.

DISCUSSION ON CASES OF LUPUS VULGARIS

DR. RICHARD S. WEISS, St. Louis: I think the second case would be a good one in which to try injections of starch solution, as reported by Kile (Kile, R. L.: Treatment of Lupus Vulgaris by Injection of Starch U. S. P. [Corn Starch], ARCH. DERMAT. & SYPH. **39**:471-473 [March] 1939. The condition is the type of lupus vulgaris that yields best to that treatment.

DR. GEORGE H. BELOTE, Ann Arbor, Mich.: I should like to ask Dr. Weiss whether starch solution has been used on the lesions of the mucous membrane.

DR. RICHARD S. WEISS, St. Louis: No, I have not had the opportunity. I think it should be tried.

DR. UDO J. WILE, Ann Arbor, Mich.: I think a point worth mentioning in all 3 of these cases, one which is somewhat unusual in my experience, is that though they are all well defined cases of lupus vulgaris, in every one there is evidence of pulmonary tuberculosis, either in the roentgenogram or in the history. Two of the patients have been in institutions for tuberculous patients. Many years ago, in looking over the material in most of the sanatoriums where pulmonary tuberculosis was treated, I found that those in charge were almost wholly unfamiliar with the picture of lupus vulgaris. Of late from one source I have noted a number of cases of lupus vulgaris associated with pulmonary tuberculosis. As I recall, most of the patients I saw abroad, where lupus vulgaris is much more common than it is here, were relatively free from pulmonary lesions.

DR. FRANZ L. BLUMENTHAL, Eloise, Mich.: These 3 cases are examples of the various types and stages of lupus vulgaris. The condition in the first case is characteristic of the flat type. There is an exogenous infection which occurred in about the same location as that in the case of primary tuberculosis of the skin. The different clinical picture is due to the allergic state. The case of the Negress is interesting from the therapeutic point of view.

I have found that when the skin and mucous membranes are so extensively destroyed, there is not much hope of getting a definite result from local treatment. A salt-free, high vitamin diet combined with general sun baths or ultraviolet irradiation give the best results. For the ulcerated lesions of the mucous membranes and the skin roentgen ray treatment is indicated.

In the last case the therapeutic result was good. The patient is practically free of lesions except those on the mucous membrane of the mouth. I suggest treatment with lactic acid, radium or roentgen rays. The internal tuberculosis must be treated carefully.

Noncaseating Tuberculosis of the Skin.

In I. B., a woman aged 55, a small area of superficial erythema was first noted on the right leg four or five years ago. This gradually enlarged, and deep-seated nodules developed in and around it. A similar lesion appeared on the left leg about a year ago. At no time have the nodules broken down and suppurated. Local applications and air-cooled ultraviolet irradiation caused no improvement. Twelve intravenous injections of gold sodium thiosulfate caused the nodules to regress noticeably but had no effect on the rest of the eruption. Twenty years ago the patient had pulmonary tuberculosis, which was treated with rest. There has never been any cough or expectoration.

Physical examination reveals an eruption confined to the lower extremities between the knees and the ankles. This is chiefly on the anterolateral surfaces and is characterized by large superficial patches of dull erythema, with nodular lesions in and around the patches. The nodules vary in size from that of an olive to that of a walnut and are not elevated. There is no clinical evidence of active pulmonic disease.

A Kahn reaction of the blood was negative. A roentgenogram of the lungs showed no evidence of active pulmonic disease. The leukocyte count was 14,000 per cubic millimeter.

Sarcoid.

E. B., a woman aged 49, first had an eruption about seventeen years ago, at which time it involved her face, arms and buttocks. Since then it has gradually become more severe. The characteristic lesions have been small papules, discrete

at first and later confluent. Pruritus has been mild. At present the eruption is disseminated over the forehead, cheeks, nose and chin and is characterized by bluish red papules and plaques, studded with small nodules. Slight ulceration is seen on the nose. Similar papules and plaques appear on the arms and buttocks. There is no clinical evidence of pulmonary tuberculosis.

Treatment has included rest, high caloric diet, cod liver oil, gold sodium thiosulfate, water-cooled ultraviolet radiation, neoarsphenamine and cautery, with only moderate temporary improvement. She has had no active treatment for five years.

The urine showed a trace of albumin, and study of the blood revealed mild anemia. The Kahn reaction of the blood was negative. The sedimentation rate was 0.77 mm. per minute. The tuberculin reaction was negative with a dilution of 1:100,000 and strongly positive with a dilution of 1:10,000. A roentgenogram disclosed no conclusive evidence of active pulmonary disease and no positive evidence of the involvement of the bones of the hands.

DISCUSSION ON THE CASE OF NONCASEATING TUBERCULOSIS OF THE SKIN AND CASE OF SARCOID

DR. M. H. EBERT, Chicago: The lesions in the case of sarcoid were almost identical with those in a young man with Besnier-Boeck-Schaumann sarcoid whom I presented two years ago at a meeting of the Chicago Dermatological Society (ARCH. DERMAT. & SYPH. **37**:706 [April] 1938). In his case there were other evidences of systemic disease: enlargement of the spleen, general adenopathy and the peculiar mottling of the skin that one sees in cases of Besnier-Boeck-Schaumann disease. The lesions on the face in the case presented today bring to my mind the description of lupus pernio, but the discoloration is not marked enough for that disease. Lupus pernio of the Besnier type is a manifestation of sarcoid. The young man with the Besnier-Boeck-Schaumann sarcoid was treated with tuberculin, with considerable improvement in the cutaneous lesions and diminution in the size of the spleen. He improved and no one has been able to locate him; however, I do not think he has been cured. Conditions of this kind are usually resistant to any type of treatment.

The condition of the first patient, with the fairly well defined plaques on the legs, was certainly an "eye opener" to me. It did not suggest any form of tuberculosis until I looked at the microscopic sections, which settled the matter beyond doubt.

DR. UDO J. WILE, Ann Arbor, Mich.: Do you think that the disease in the second case should be labeled sarcoid?

DR. M. H. EBERT, Chicago: Yes.

DR. CLARK W. FINNERUD, Chicago: To me the most instructive case shown today was that of the woman with the lesions on the legs. It is likely that any one here would have been mistaken in the diagnosis were it not for the histologic section.

DR. FRANK STILES, Lansing, Mich.: I should like to present more information about the second case. I had the opportunity of seeing the patient two years ago. She had the lesions she presents now, and in addition she had an abscess in the pharynx which bulged out—a cold abscess. About six months later a generalized acute pustular eruption developed which I could not distinguish from variola. The lesions were grouped and arranged like those of variola.

DR. UDO J. WILE, Ann Arbor, Mich.: Was the patient febrile?

DR. FRANK STILES, Lansing, Mich.: The temperature was 102 F.

DR. UDO J. WILE, Ann Arbor Mich.: Was the eruption similar to that of smallpox?

DR. FRANK STILES, Lansing, Mich.: The condition took a little longer to develop than does the eruption of ordinary smallpox.

DR. M. H. EBERT, Chicago: Did she already have the lesions on the nose?

DR. FRANK STILES, Lansing, Mich.: No.

DR. M. H. EBERT, Chicago: Was an examination made for tubercle bacilli in the acute lesions?

DR. FRANK STILES, Lansing, Mich.: No. The lesions were multilocular; they were not necrotic. The reason I mentioned this case is the absence of scarring. Lesions of variola or tuberculids result in scarring.

DR. HERBERT RATTNER, Chicago: The yellowish tinge and the shiny surface of the lesions in the first case bring to mind a case reported by Bruce-Jones (*Brit. J. Dermat.* **49**:238 [May] 1937). A woman with a tuberculous background had lesions which clinically resembled morphea. However, the microscopic picture, unlike that in this case, was an indeterminate one suggestive of necrobiosis lipoidica. Goldsmith has reported a similar case (*Proc. Roy. Soc. Med.* **28**:363, 1934-1935).

DR. GEORGE H. BELOTE, Ann Arbor, Mich.: With reference to the case of noncaseating tuberculosis, I am surprised that some one has not suggested the possibility of necrobiosis lipoidica without diabetes. While I thought there was no question of the diagnosis, there is, nevertheless, this morning a yellowish tinge to these lesions. If I had seen the patient this morning for the first time, I would have been suspicious of necrobiosis. I included a short reference to Goldsmith's case in the report of one I made a year ago (ARCH. DERMAT. & SYPH. **40**:887 [Dec.] 1939). In this case the diagnosis was morphea-like tuberculosis of the legs. As a result of microscopic study it was discovered that the condition belonged to the necrobiosis group.

As to the other case reported here, microscopically there is no question of the diagnosis. The condition is Boeck's sarcoid. I admit, though, that the lesions are unusual, perhaps a little more widespread.

A Case for Diagnosis (Lupus Miliaris Disseminatus Faciei? Lichen Planus?).

Mrs. L. D., aged 24, has an eruption which started about a year ago with a mildly pruritic scaling of the right upper eyelid. This gradually progressed until both eyelids of both eyes were involved. As the process went on, dark brown pigment became increasingly prominent. Concomitant with the onset of the eruption the patient noted blurring of vision and spots before her eyes.

Physical examination shows that the eruption is confined chiefly to the eyelids but involves also the remainder of the face to a less degree. The smallest lesion is a pinhead-sized papule, suggestively flat topped, shiny and dark brown. Some of the lesions, by coalescence and extension, have formed plaques from 0.5 to 1 cm. in diameter. Diascopy accentuates the color, although no distinct "apple jelly" nodules are noted.

Ophthalmologic examination revealed iridocyclitis of the left eye, cyclitis of the right eye and keratitic precipitates in the left eye, probably on a tuberculous basis.

The results of tuberculin tests performed elsewhere were repeatedly negative. A roentgenogram of the chest was normal. The blood count showed 4,370,000 erythrocytes per cubic millimeter, 92 per cent hemoglobin and 5,750 leukocytes and with a differential count of 56 per cent neutrophils, 18 per cent large lymphocytes, with an occasional atypical cell, 18 per cent small lymphocytes, 6 per cent monocytes, 1 per cent eosinophils and 1 per cent basophils. The Kahn reaction of the blood was negative.

DISCUSSION

DR. M. H. EBERT, Chicago: Some years ago Dr. Nomland had a small series of cases of lesions on the face and around the eyes. I think the lesions were single. Histologically, there was a dense infiltrate of lymphocytes resembling leukemia cutis. The lesions proved to be benign and never multiplied. No new lesions appeared. In an article on lymphocytoma (Beitrag zur Pathogenese der Lymphocytome, *Arch. f. Dermat. u. Syph.* **173**:181-195, 1935), Epstein described a nodular variety made up of a dense aggregate of lymphocytes. In the slide I

saw there seemed to be a dense local infiltrate of lymphocytes. Perhaps the condition in this case is similar to the lymphocytoma described by Epstein.

DR. CLARK W. FINNERUD, Chicago: I had not thought of the diagnosis Dr. Ebert has suggested, but think it is a good one. From the appearance of the section there is more likelihood of the condition's being lupus erythematosus than either lupus disseminatus faciei or lichen planus. I am in favor of a diagnosis of lupus erythematosus, even clinically.

DR. GEORGE H. BELOTE, Lansing, Mich.: I confess that this case has been puzzling. I thought at first that the condition was tuberculosis. However, the microscopic picture has never substantiated that idea. The type of pigment is more compatible with that produced by lichen planus than anything else. The other suggestion of lupus erythematosus is probably a good one, and ought to be considered. I had not made that diagnosis. The other possibility, and one that is probably not borne out by the microscopic section, is lichen planus.

A Case for Diagnosis (Tuberculosis? Tertiary Syphilis? Both?).

About twenty years ago A. L., a white woman aged 54, noted a coin-sized, bright red spot on the anterolateral surface of the left tibia. The lesion gradually enlarged, lost its bright color and became indurated but never ulcerated. The lesion has never cleared, but has steadily progressed. It has never pained much, but the leg swells a great deal when she walks. The edema has always decreased promptly on elevation of the extremity.

There is no family history of tuberculosis, nor is there a history of contact with the disease. The patient's general health has been good.

Physical examination shows purplish discoloration of the skin of the left leg, associated with considerable induration, extending from the achilles tendon to a short distance above the popliteal space. There is induration of the entire leg, and in the vicinity of the popliteal space discrete nodules may be felt. There is no pain, no tenderness and no evidence of ulceration.

The Kahn reaction of the blood was 4 plus.

DISCUSSION

DR. ARTHUR R. WOODBURNE, Grand Rapids, Mich.: The fact that the patient has not had antisyphilitic treatment makes me feel that the condition is syphilis. The area gave me the impression of a deep serpiginous, nodular syphilitic lesion. There is a nodular group of lesions deep in the subcutis which involves the muscle and tendon. The microscopic appearance is compatible with that of the diagnosis, and I think antisyphilitic treatment should be tried.

DR. HARRY FOERSTER, Milwaukee: Both syphilis of a late infiltrating type and tuberculosis of the erythema induratum type must be considered. The unilateral distribution and diffuse character of the lesions favor a diagnosis of syphilis, as do the perivascular round cell and plasma cell infiltrates, the absence of caseation necrosis and the few giant cells. The depth of the inflammatory infiltrate favors erythema induratum. The therapeutic test for syphilis may be necessary to determine the diagnosis.

DR. M. J. REUTER, Milwaukee: I agree with Dr. Foerster that the lesions are probably a late manifestation of syphilis. Because of the depressed areas and the boardlike infiltration, I thought of nodular panniculitis or Weber-Christian disease in the differential diagnosis. If these lesions occurred on the trunk or thighs this diagnosis would be likely.

DR. UDO J. WILE, Ann Arbor, Mich.: I have not seen this patient before, but I did study the histologic section. It seemed to me that there is more evidence in favor of syphilis than of tuberculosis. I believe this condition is a deep ulcerative syphilid, and because there is a good deal of softening, I think she would get well promptly if given antisyphilitic treatment.

The features that Dr. Foerster mentioned in connection with the histologic section were puzzling to me also. Erythema induratum is apt to infiltrate around the subcutaneous fat, but I have not seen that condition often associated with gumma.

A Case for Diagnosis (Lupus Erythematosus?). Presented by DR. LOREN W. SHAFFER, Detroit.

C. W. M., a man aged 56, has an eruption involving the arms, neck and face which began in 1929 and has been present almost continuously since. It has fluctuated in severity and has been better in summer. He was completely free from the eruption from April 1936 to August 1937, after the removal of his tonsils.

Now, new lesions appear suddenly as erythematous papular or nodular infiltrations that tend to assume crescentic configuration. A central dry crust develops on the larger lesions. No bullous lesions have been seen. Moderate itching and burning are present. Smaller lesions may disappear completely in a few days, but larger lesions require from two to three months to undergo involution, and leave moderate pigmentation but no atrophy. Occasionally lesions appear on the chest and back. Small but atypical lesions have appeared on the legs in the last six weeks. Multiple furuncles have developed during the past year and have been active in the last two months. There has been a definite tendency toward the localization of active lesions to the extensor surfaces of the arms, the posterior portion of the neck and around the eyes. Crusted lesions have been limited largely to the arms.

In 1931 a histologic study performed at Ann Arbor, Mich., was reported as suggestive of lupus erythematosus. A Wassermann reaction of the blood was negative. The differential blood count was within normal limits. A roentgenogram of the chest was normal.

The patient was treated for nearly three years at the University Hospital with gold sodium thiosulfate, without response. The condition cleared completely after the administration of a small amount of a bismuth compound, roentgen ray therapy and tonsillectomy. Then there were recurrences during the winters of 1937-1938 and 1938-1939. The present severe activity has been getting progressively worse since November 1939. Sulfanilamide, quinine bisulfide, mapharsen, Abdol capsules containing vitamins A, B, G (B_2) and D, liver extract, ultraviolet radiation, staphylococcus toxoid and autogenous (boils) vaccines have been tried, without encouraging results.

DISCUSSION

DR. CLARK W. FINNERUD, Chicago: The lesions were soft and grossly appeared like sarcoid. The diagnosis of lupus erythematosus must have been based partly on the section that was presented. On being questioned, the patient stated that he thought the specimen was taken from a new lesion, though he could not be sure, since the section was made several years ago. A new lesion of sarcoid could present the same microscopic picture as that seen in this case, the histologic characteristics of the disease not having had sufficient time to become manifest. I suggest taking a biopsy specimen from an old lesion. My diagnosis would be sarcoid rather than lupus erythematosus.

DR. HARRY FOERSTER, Milwaukee: The patient's statement, corroborated by Dr. Shaffer's observation, that a characteristic of the eruption has been the sudden appearance and short duration of an evanescent type of lesion is against a diagnosis of sarcoid or lupus erythematosus. I believe that this condition may be an eruption of the granuloma annulare type.

DR. M. H. EBERT, Chicago: Dr. Finnerud will recall a patient Dr. Ormsby had under observation for twenty years. A young woman had lesions of this type starting on the inside of the thigh, spreading to the buttocks and arms and at times becoming generalized. Earlier these lesions were active. The history was

identical with that in the present case. The lesions appeared suddenly, were crescentic and bluish red and resembled those of sarcoid. Early in the course the edema was so great that there was some maceration of the shallow ulcers, though she has only a few scars. Then they disappeared spontaneously and slowly. That case Dr. Ormsby has always classified as one of an unusual form of toxic erythema multiforme.

DR. UDO J. WILE, Ann Arbor, Mich.: When I saw this patient two years ago in the hospital he presented a different picture. At that time he showed lesions characteristic of erythematous lupus. However, he did not respond to gold therapy but improved with the taking of a bismuth compound. The lesions have changed so that I did not recognize him when I saw him today. The lesions on the arms and legs are strikingly similar to those of an old nodular syphilid. Other lesions are so infiltrated and arcual that one might think of their being lesions of mycosis fungoides. It would seem to me difficult to diagnose this condition as diffuse erythematous lupus at this time.

DR. LOREN W. SHAFFER, Detroit: I am grateful for the discussion of this case. It brings out the many diagnoses that I have considered. I think that another biopsy should be performed, particularly of tissue from one of the more chronic, deep lesions.

The possibility of syphilis is suggested by the persistent, deeply infiltrative, arciform character of many of the lesions. However, the serologic reactions have been repeatedly negative. The patient seemingly responds to bismuth therapy. He was given arsphenamine treatment, without any response.

The question of sarcoid has been considered, but the present nature of many of these lesions seemingly is against such a diagnosis. The lesions around his eyes were edematous ten days ago but have almost completely disappeared within the last ten days. The lesions about the face have been less persistent than those on the arms, which tend to run a course of two or three months.

The fact that this patient was well for a period after the tonsillectomy would favor the possibility of some focal infection's being an etiologic agent in the case. There is no other evidence of a focus of infection except an atypical history of infection of the gallbladder.

DR. OTTO H. FOERSTER, Milwaukee: The patient told me that the eruption disappears completely early in the summer, when he strips naked and exposes himself to the sun, but that in August the lesions begin to reappear. Photosensitization seems to be concerned in its production. An investigation of the hepatic function is suggested, for in some instances there is an association of dermatologic conditions with disease of the gallbladder and the bile ducts.

Pemphigus Erythematodes (Senear-Usher Syndrome).

About March 1939, A. K., a Jewish woman aged 31, first noted "red spots" on the chest. These remained limited to the chest for several months, after which the lower part of the back became involved. About thirteen months after the onset, lesions appeared on the face. Vesicles first appeared fifteen months after the initial lesions and were first noted on the arms. The patient has never had any lesions in the mouth or on other mucous membranes.

Physical examination reveals a healthy-looking woman with a generalized eruption, which manifests a distinct predilection for the scalp, nose, cheeks, chest and back. Most of the lesions are slightly eroded, nummular erythematous macules, with a superimposed greasy, yellowish crust. These are confluent on the cheeks and relatively discrete on the trunk. Some of them, particularly those on the forehead and chest, suggest recently ruptured bullae. Nikolsky's sign is readily demonstrable. There are no mucosal lesions.

There were slight anemia, a normal differential blood count and normal urine. The result of a Pels-Macht test was 66 per cent. The Kahn reaction of the blood was negative.

The patient received twenty roentgen ray treatments before coming to the University Hospital. During her stay here she was treated with baths, compresses, bland ointments and enteral and parenteral preparations of various substances: arsenic, mercury, moccasin venom, sulfanilamide, colloidal gold, foreign protein, sulfapyridine, vitamins A and D in large dosage and two courses of germanin. She was also given three blood transfusions, which appeared to have a beneficial effect. The Nikolsky sign has been easily elicited on some occasions and has been absent on others. Bullae have appeared from time to time throughout her stay in the hospital.

M. S., a woman aged 32, first noted a vesicular eruption about the neck five years ago, which spread rapidly to involve the whole body. Since, her skin has never been completely healed. When first seen here three years ago she had a universal exfoliative dermatitis, which has been followed by remissions and exacerbations at irregular intervals. The Nikolsky sign has been elicited frequently. Vesicles, papules, pustules and verrucous lesions of a seborrheic type have been noted at various times. The mucous membranes have been involved. Severe pruritus has been present.

The patient was last seen seven months ago, at which time she had only mild subsiding erythema and keratoses about the neck and under the breasts. A few new vesicles were continuing to appear on the legs.

Treatment has included the usual bland regimen of baths, wet dressings and mild ointments. Moccasin venom, arsenic, mercury, thiamine hydrochloride and germanin were given orally and parenterally, without remarkable response. Ultraviolet irradiation was of no benefit. Superficial roentgen ray therapy caused temporary improvement.

Blood counts were essentially normal except for mild anemia and eosinophilia, which are now minimal. The Pels-Macht index was 59 per cent. The Kahn reaction of the blood was negative. A histologic section is presented.

NOTE.—A report of this case was included in the article by Wile and Arnold (The Senear-Usher Syndrome, ARCH. DERMAT. & SYPH. **40**:687-703 [Nov.] 1939).

DISCUSSION ON CASES OF PEMPHIGUS ERYTHEMATODES (SENEAR-USHER SYNDROME)

DR. F. E. SENEAR, Chicago: This condition has been discussed so often and reported so thoroughly by Dr. Arnold that there is not much to be added. I saw the first patient on a previous occasion. I thought she had a benign type of pemphigus. I was interested in the second patient. In spite of the fact that she shows little eruption, she has a few crusted seborrheic lesions of a keratotic type on the back. These appeared after the involution of the vesicular lesions, and they are characteristic.

In respect to the possibility that any of the cases in this group are really examples of lupus erythematosus, the point made by Dr. Harry Foerster that evanescence is a strong point against a diagnosis of lupus erythematosus occurred to me: It is a characteristic of many of these cases that the lesions may have a rapid onset and an equally rapid disappearance.

DR. RICHARD S. WEISS, St. Louis: There has been considerable discussion whether the Senear-Usher syndrome is pemphigus or lupus erythematosus. A few years ago a woman came to the Barnes Hospital suffering from typical pemphigus of the vegetative type and with lesions in the mouth, axilla, around the umbilicus (where there was a patent urachus), in the genitalia and in the genitocrural region. A diagnosis of pemphigus vegetans was made. She was not satisfied and went around the country seeking a different diagnosis. She discovered the bad prognosis of the disease and was examined by twenty or more dermatologists in various parts of the country east of the Mississippi, two of whom made a diagnosis of a disease other than pemphigus. She was treated with iron cacodylate, without results. She was then given large doses of vitamin D, became perfectly well and remained so for about four years, without a single lesion. She went to Florida

on a vacation, acquired a severe sunburn and came back to St. Louis with typical lesions of the Senear-Usher syndrome. Dr. M. R. Caro, whom she consulted because he had reported on the sulfanilamide treatment for pemphigus, saw her and made the same diagnosis. She came back to St. Louis and started treatment with Pollitzer's solution (2 per cent sodium arsenate and 2 per cent phenol in distilled water), with no results. She now has typical dermatitis exfoliativa. Her illness started with pemphigus of the vegetans type, a diagnosis which was verified by about fifteen competent physicians. Then the Senear-Usher syndrome developed, followed by generalized dermatitis exfoliativa. I think her history shows a definite relation between the Senear-Usher syndrome and pemphigus.

Dr. George H. Belote, Ann Arbor, Mich.: Some one mentioned a few minutes ago the evanescent character of these lesions; I wish I could agree. The woman I presented has been in the ward for months. The other woman has had all kinds of treatment. The first patient has been treated with germanin and her lesions have cleared on two occasions. However, the drug produced such a severe renal irritation that I have not been able to go on with its administration.

Dr. F. E. Senear, Chicago: When I referred to evanescence I did not mean to imply that the lesions in all these cases are characterized by sudden appearance and rapid disappearance. The point I wanted to bring out is that the rapid appearance and at the same time the rapid disappearance constitute a striking characteristic. The patient on whose case Dr. Usher and I based our original report has been in Chicago ever since, and we have had her under observation many times. Dr. Stillians now has her in his care. We would see her on one day with only a few lesions on the body, and a day or two later she would come in with one cheek completely denuded.

Pemphigus Vulgaris.

Six months ago A. S., a man aged 63, first had an eruption which appeared as an eczematoid patch on the right temple. The lesions remained stationary until three months ago, when vesicles began to appear, first on the chest and later over the whole body, sparing the mucous membranes.

Treatment included baths, wet dressings, bland ointments, oral medication (prior to admission to the University Hospital), 1.2 Gm. of adrenal concentrate daily by mouth and intravenous injection of 1,000 cc. of a saline solution daily. Since administration of the adrenal concentrate and the saline solution was instituted fewer vesicles have appeared.

Physical examination shows generalized involvement with vesicles, bullae and many superficially denuded areas, some of which are now secondarily infected. The vesicles and bullae are flaccid, and many are without erythema at the base. The Nikolsky sign can be elicited. The mucous membranes are clear.

The Kahn reaction of the blood was negative. Urinalysis showed no bromides, iodides or arsenic. Total serum proteins were 7.2 mg. per hundred cubic centimeters; albumin amounted to 2.9 mg. and globulin to 4.3 mg. per hundred cubic centimeters, with an albumin-globulin ratio of 0.7. Serum calcium was 11.6 mg. per hundred cubic centimeters.

DISCUSSION

Dr. Richard S. Weiss, St. Louis: I think that there cannot be any question about this patient having pemphigus. It is difficult to say what is and what is not pemphigus. The opinion seems to be common that if the patient gets well the disease was not pemphigus. I have had a number of patients with what was called pemphigus who have recovered and have stayed well. The experience in other cities seems to be more unfortunate, and a number of physicians have made the statement that none of their patients with a condition diagnosed as pemphigus ever got well. It is perhaps a good approximation to say that about 30 per cent of the patients with pemphigus treated in St. Louis apparently recover while under treatment. I admit that with the iron cacodylate treatment a high caloric, high vitamin diet and rest are also given. Some of the patients that have recovered

have been seen at various meetings by many of the physicians present, and the diagnosis of pemphigus was confirmed by the great majority. I believe that some of the patients do get well, perhaps as a result of the iron cacodylate treatment. This patient, it seems to me, deserves intensive treatment with iron cacodylate and has a chance to recover.

DR. E. A. OLIVER, Chicago: One point to which attention should be called is that a patch developed in the right temporal region in this case three months before the onset of pemphigus. I was interested in this feature because I have seen the condition develop this way in several cases. An elderly Jewish woman, whom Dr. Senear saw with me, had a patch of moist, eczematoid dermatitis on the vertex of her scalp that had a foul odor and resisted all treatment for several months. One day she failed to appear at the office, and I was called to her home; she was literally covered with bullae—typical pemphigus. The disease ran a rapidly fatal course and she died in several weeks.

I am sorry I cannot agree with Dr. Weiss. The physicians in Chicago have not succeeded in curing any of the patients with pemphigus. The Davis treatment, blood transfusions, arsenic and sulfanilamide have been used without success. The disease in St. Louis must be different from that in Chicago, because in Chicago pemphigus is looked on as a fatal disease.

DR. CLARK W. FINNERUD, Chicago: I should like to ask Dr. Weiss if he followed any of those patients over a period of years. I have encountered cases in which the pemphigus cleared temporarily, but soon recurred, followed by death. I remember some of the cases which were reported years ago at a meeting in St. Louis, some of them in children. In my opinion, the cases in which the condition was "cured" were instances not of pemphigus but of bullous impetigo, toxic bullous dermatitis and other bullous eruptions. One should not hesitate to admit mistakes in diagnosis. Everybody makes them. Although not meaning to be in any way disrespectful, I have come to designate any case of supposed pemphigus in which the patient gets well and stays well as one of "St. Louis pemphigus."

DR. M. R. CARO, Chicago: I wish to report that the 2 patients who were the subjects of my preliminary report on sulfanilamide (Pemphigus: Treatment with Sulfanilamide (ARCH. DERMAT. & SYPH. **37**:196 [Feb.] 1938) are both dead.

DR. OTTO H. FOERSTER, Milwaukee: I wish to refer more particularly to the cases of benign pemphigus in which isolated and relatively few, though characteristic, bullous lesions develop suddenly on apparently sound skin. In such patients new lesions may develop over several weeks or months, and then there may be no lesions for a long period, sometimes for as long as ten to twenty years. I have observed several cases of this kind. Recently I saw a patient who had not had lesions for about twenty years and then had a recurrence of lesions of this type, which again disappeared. The diagnosis of pemphigus in that case was made originally by Dr. Pusey. The mild condition is in striking contrast to the acute type, often initiated with oral lesions, of which more are seen today than formerly. It seems to me there is a changing geographic distribution of cases of pemphigus and also that the benign type is now observed less often. I should be interested to hear what Dr. Blumenthal has to say on this subject.

DR. FRANZ L. BLUMENTHAL, Eloise, Mich.: Dr. Foerster mentioned the importance of the geographic distribution. This conforms to my experience. Before the World War, one saw pemphigus practically only in Jewish people from Russia. After the war there were a few cases in the German population, Jewish and non-Jewish. With regard to benign pemphigus, I have seen patients whose lesions have remained localized for many years. I remember a patient who had lesions on the penis for ten to fifteen years before the eruption became generalized. Oral lesions are not so seldom localized for a long time. When the eruption becomes generalized there is not much hope. On the other hand, there are a few conditions which start clinically like pemphigus, but later the diagnosis is not maintained because of recovery.

DR. LOREN W. SHAFFER, Detroit: Two months ago I presented before the Detroit Dermatological Society a patient with a condition which was accepted as typical Senear-Usher syndrome. Since then pemphigus foliaceus has developed. She failed to respond to sulfanilamide. She is improving; whether the improvement is due to intensive treatment with vitamins (A and D) will be interesting to observe. I should like to ask whether any one has had any experience with riboflavin.

DR. OTTO H. FOERSTER, Milwaukee: I have had 2 patients with pemphigus who failed to respond to riboflavin.

DR. THEODORE CORNBLEET, Chicago: I have had a patient under observation with typical pemphigus that began in the mouth and seemed to be fulminating. The patient for the present seems to be responding to sulfapyridine. I do not know how long that improvement will be maintained; I have my doubts whether it will continue. My use of sulfapyridine in cases of pemphigus was suggested by a report of its usefulness in treatment of dermatitis herpetiformis. I have seen some improvement in 2 patients with this disease. If dermatitis herpetiformis continues to respond as well to sulfapyridine, as it seems to at present, the drug may be a therapeutic agent for the differential diagnosis of dermatitis herpetiformis and pemphigus.

DR. UDO J. WILE, Ann Arbor, Mich.: I have never observed a case that I thought was certainly one of pemphigus in which the termination was not unfavorable. I have tried everything that I know of and that is suggested in the literature: the Davis treatment, sulfanilamide and riboflavin; none of my patients with pemphigus have recovered. Perhaps there is some difference in geographic distribution. Also, it is possible that there is a difference in criteria. There are a number of conditions I should like to call pemphigus that I do not feel are pemphigus. They are pemphigus-like eruptions. I do not believe that all of Dr. Brocq's cases are those of pemphigus.

DR. H. RATTNER, Chicago: At the Cook County Hospital I treated 2 patients with pemphigus by means of smallpox vaccine, with good "takes" in both instances but with no beneficial results. I also treated 4 patients with rabies vaccine, without benefit. My experience is similar to that of Dr. Wile.

Universal Exfoliative Dermatitis, Probable Lymphoblastoma. Presented by DR. C. A. DOTY, Detroit.

Three years ago in M. M., a man aged 61, a red pruritic, scaling eruption developed over the thighs and hips. This has extended gradually and for the past year has been universal. In spite of loss of weight, the patient's general health has been fairly good.

He also gives a history of having had a penile sore about thirty years ago, which soon disappeared after local treatment and six intramuscular injections. No further antisyphilitic therapy was ever given. He had symptoms of hypertension, for which he was given a "pink liquid medicine" shortly before the onset of the dermatitis, but since then its administration has been discontinued. He has not worked at his trade as a carpenter since the onset of the eruption and has been confined to bed most of the time during the past six months.

Examination reveals a universal, scaly erythroderma, with fissures of the palms and soles and onychogryposis. The edge of the liver is palpable. There is also generalized lymphadenopathy.

The Kahn reaction of the blood was negative. A blood count showed 14.2 Gm. of hemoglobin per hundred cubic centimeters (91 per cent), 4,900,000 erythrocytes and 16,800 leukocytes per cubic millimeter, with a differential count of 72 per cent neutrophils, 11 per cent large lymphocytes, 9.5 per cent small lymphocytes, 5.5 per cent monocytes, 2.5 per cent eosinophils and 0.5 per cent basophils.

The report from the Simpson Memorial Institute was: "The blood picture is not definitely suggestive of lymphoblastoma." The blood culture revealed no

growth. While in the hospital the patient received topical applications, ultraviolet radiation and superficial roentgen ray therapy, with some benefit.

DISCUSSION

DR. H. L. KEIM, Detroit: I think that in this case the term dermatitis exfoliativa could be dropped and that the case could be classified as one of lymphoblastoma, of the universal leukemia cutis type. It seems to me that the only requirement lacking for such a diagnosis is the number of circulating lymphocytes, and it is my belief that if the patient lives long enough these neoplastic cells will get into the circulation and definitely establish a diagnosis of universal leukemia cutis. The histologic picture fulfils the requirements.

DR. E. A. OLIVER, Chicago: In a case of lymphogranulomatosis (Urbach, E.: Lymphogranulomatosis [Hodgkin's Disease]: Treatment with Sulfanilamide, ARCH. DERMAT. & SYPH. **41**:181 [Jan.] 1940), the condition improved remarkably on treatment with sulfanilamide. Urbach stated that he had used this drug because the English school believes that Hodgkin's disease is a virus disease.

Early Mycosis Fungoides. Presented by DR. UDO J. WILE, Ann Arbor, Mich., and DR. H. L. KEIM, Detroit.

M. S., a white man aged 39, was first seen on Dec. 4, 1939, when he presented a generalized eruption on the trunk, arms and legs which resembled pityriasis rosea. He was seen again on Feb. 12, 1940, at which time the eruption had changed considerably. The lesions had now become brownish, infiltrated plaques and were scattered over the trunk, face, arms and legs. Since that time he has received superficial roentgen ray therapy, with considerable improvement.

DISCUSSION

DR. H. L. KEIM, Detroit: The diagnosis of early mycosis fungoides was made on clinical grounds only when I first observed the patient, in the middle of January. He had been seen by Dr. Wile before, when he presented what was thought to be a somewhat atypical and extensive pityriasis rosea, but in January the itching was severe and the lesions became heavily infiltrated. There was also enlargement of all the superficial lymph glands. Unfortunately, the histologic section shows little and is scarcely more than suggestive. As so characteristically occurs in cases of mycosis fungoides, these lesions have responded, to their present status, to small amounts of superficial roentgen ray therapy. Within the past two weeks there have developed, in spite of the treatment, numerous pea-sized nodules on the outer surface of each thigh and on the abdomen, which I feel should be removed for microscopic study in the belief that they will show more characteristic microscopic evidence of mycosis fungoides than the section presented today.

DR. CLARK W. FINNERUD, Chicago: Early lesions of mycosis fungoides can usually be diagnosed histologically with certainty. I suggest that sections be prepared from the plaques on the thigh; they are likely to substantiate or rule out this diagnosis.

DR. UDO J. WILE, Ann Arbor, Mich.: In my experience I have never seen anything like this condition. The patient came to me because he had a lesion in the mouth. I thought he had periadenitis mucosa. In passing he said: "I wish you would look at the rash on my body." Dr. Belote and I agreed that it was pityriasis rosea. Within six weeks these lesions had grown so that no one would question the diagnosis of the infiltrative stage of mycosis fungoides. The fact that they have responded so well to roentgen therapy and left the pigmentation makes the diagnosis more likely. I believe that this man has mycosis fungoides, in spite of the fact that the histologic section is not conclusive. I am surprised that some one did not make the diagnosis of a fixed eruption, because the pigmentation did suggest that associated with phenolphthalein. There was no suggestion of a

fixed eruption when we saw him originally. He had an enlarged spleen then, and he still has enlarged lymph glands.

DR. FRANCIS E. SENEAR, Chicago: I agree that the histologic picture does not support the diagnosis of mycosis fungoides. The eruption has undergone involution so much at present that it is difficult to have a definite opinion. One point might be brought out; that is, though recession has taken place in a number of the lesions, one can make out a definite tendency toward the development of crescentic and annular configurations, such as are seen in mycosis fungoides.

Necrobiosis Without Diabetes.

E. K., a white woman aged 33, states that an eruption appeared on the left leg about five years ago. At that time she thought it was a bruise, although she does not remember traumatizing the region. The same type of lesion appeared on the right leg two or three years ago. Her general health has been good. Her mother has diabetes mellitus, which is controlled by insulin.

Physical examination reveals two cutaneous lesions. That in the midline of the upper third of the right leg is now represented by a scar; the lesion was excised for histologic study. Over the middle of the anterior aspect of the left shin is an irregular plaque, about 4 by 2 cm., which is distinctly yellowish red. This appears to be inlaid, and on the surface numerous small vessels can be seen. There is also some associated scaling. Clinically the lesion is typical of necrobiosis without diabetes, and the patient assures me that the lesion on the right was similar. The liver is just palpable.

Urinalysis showed no sugar. Dextrose tolerance was normal. The fat content of the blood was as follows: 728 mg. of total fat, 183 mg. of total cholesterol and 44.1 mg. of free cholesterol per hundred cubic centimeters. Hepatic function, with the bromsulphalein test, was within normal limits.

DISCUSSION

DR. M. R. CARO, Chicago: I think that clinically the lesion is necrobiosis lipoidica diabeticorum. Histologically, however, the changes are not characteristic. The lesion is much more inflammatory than one ordinarily sees in necrobiosis. There is, however, a microabscess on one side of the lesion, which suggests that there might have been a coincident infection when the biopsy specimen was removed. If these inflammatory changes are disregarded, the appearance of the slide is compatible with the diagnosis of necrobiosis. If any more tissue is available it would be well to make a sudan III stain; if not, biopsy should be repeated.

DR. GEORGE H. BELOTE, Ann Arbor, Mich.: As a matter of fact, the biopsy was not performed here; only the slide was sent, with no tissue for study or for fat stain. From my previous experience I suspect that there might be difficulty in demonstrating fat. It seems increasingly obvious that the pancreas has more than one function. Every one who has followed the studies in recent publications will probably come to the conclusion that when one says insulin diabetes, one has said the last word. This is the one type of fat infiltration which is being treated with lipocaic. It is only two weeks since treatment was begun, so the time is too short for prediction of the result.

DR. THEODORE CORNBLEET, Chicago: I believe that this particular case is one of necrobiosis based on abnormal fat metabolism rather than on defective sugar metabolism. It is interesting to note that in this case some lipoid values are, if anything, below normal or near the lower limit of normal. In some cases in which the values for blood lipoids are high, lipocaic lowers them. Dragstedt has shown that lipocaic may have favorable action, even though one of the lipoids, cholesterol, is not increased. Nevertheless, one of the principal actions of lipocaic is to reduce high lipoid levels in the blood. In psoriasis that was the point of attack, for other physicians had also found that blood lipoid values were raised

in this disease. Whether the reported favorable action of lipocaic on psoriasis is accomplished by the mere reduction of blood lipoid values remains to be seen. Similarly, it is possible that the lipoid pattern may be altered qualitatively, if not quantitatively, for favorable action in necrobiosis.

Leukoderma Acquisitum Centrifugum.

V. S., a woman aged 33, had a mole excised from her back five years ago. The site of excision took considerable time in healing. Subsequent to the removal of the mole the patient noticed that a zone of depigmentation developed around each of several moles situated on the back and on the abdomen. This zone of depigmentation increased in size for several months and then all activity ceased. The lesions are asymptomatic.

Physical examination reveals several lesions, primarily on the trunk, each characterized by a central soft, pigmented nevus surrounded by a zone of depigmentation, which varies in size from 2 to 8 cm.

The basal metabolic rate was —10 per cent. The urine was normal.

Multiple Pigmented Nevi.

W. A., a white woman aged 32 is presented, the report of whose case has already been published (Arnold, H. L.: Multiple Pigmented Nevi, ARCH. DERMAT. & SYPH. **40**:386 [Sept.] 1939).

DISCUSSION

DR. M. H. EBERT, Chicago: I think there is no question in this case that the condition is an interepidermal multiplication of *"cellules claires."* In the ordinary pigmented nevus these new-formed cells proliferate into the corium, a process which Unna designated as *Abtropfung.* Why this did not occur in the case under consideration is impossible to state; I have no idea what causes proliferation of these cells.

DR. M. R. CARO, Chicago: About five years ago I saw a patient with generalized nevi similar to those in this case. After an injury to a lesion on the right shoulder a rapidly growing tumor appeared, which was resected widely by electrocautery. There was no recurrence. A few weeks ago, soon after she injured one of the preexisting nevi on the right leg, this nevus also developed into a rapidly growing tumor, which was excised and proved to be a malignant melanoma.

Vitamin B Deficiency.

M. B., a white woman aged 68, has been troubled with abdominal pain and discomfort after eating for many years. There have been episodes of diarrhea recently. Although adequate food has been available, her appetite has been poor and her diet inadequate in meat, eggs, milk and vegetables. Her skin has been dry, and on several occasions in the last ten years she has had attacks of sore tongue and burning of the esophagus and stomach.

Examination shows the patient to be undernourished, with dry, pale skin. The tongue is bluish red, with atrophy of the filiform papillae and relative smoothness of the surface. There is mild maceration of the angles of the mouth, with some erythema. Inspection of the legs discloses fine icthyosiform scales.

Vitamin (A and B) Deficiency.

F. G., an Italian woman aged 30, was first seen in 1934 with an intermittent vesicular eruption on the hands, which occurred each winter and was of eight years' duration. The diagnosis of tinea was made, and the skin responded readily to the usual treatment. There was no family history of a similar trouble.

She was next seen in 1939 and at that time had an eczematoid dermatitis on the hands. This was not considered to be of fungous origin, although the

exact cause was indeterminate. She returned in February 1940, having had the same sort of trouble for four months.

The history revealed a diet limited in fruit, meat, eggs, milk and fresh vegetables, with the addition of fruits and vegetables only during the summer months. Her general health was good. There was nothing in the history to suggest a contact factor.

Physical examination in February 1940 showed hyperkeratosis and pigmentation on the knuckles, elbows, knees and achilles tendons. There was drying of the skin of the legs laterally, on the feet and to a lesser degree on the arms, with follicular keratotic lesions on the thighs laterally. On the dorsa of the hands, the arms and the mesial surface of the left thigh there was a hyperkeratotic, dully erythematous, scaling chronic eczematoid dermatitis. The skin was normal elsewhere. There was no atrophy of the tongue or glossitis. The knee jerks were diminished. No muscular tenderness or increased capillary permeability was present.

After ten days of treatment with nicotinic acid amide (450 mg. per day), without local therapy or change in diet, the skin showed general improvement. She has been receiving 300 mg. of nicotinic acid amide since March 1.

Direct examination and cultures for fungus gave negative results.

DISCUSSION ON CASES OF VITAMIN DEFICIENCY

DR. GEORGE H. BELOTE, Ann Arbor, Mich.: These patients are presented not because all that is being said or written about vitamin deficiency is believed but because the internist is pointing out this or that type of cutaneous lesion as representative of vitamin A, B or C deficiency. Because of the pigmentation, the internist believes that the woman presented as having vitamin A and B deficiency also has C avitaminosis. This patient has been treated with nicotinic acid amide for three or four weeks, and the eruption, with no local therapy, has receded, I should say, by half.

The case of the other woman, who presented the red tongue and perlèche, raises the question of the causation of perlèche. It has been reported as due to this or that. Dr. Finnerud did some excellent work several years ago with Monilia cultures of material from lesions of patients with perlèche. Now the internists state that the condition is due to vitamin deficiency, not to infection. These cases were presented to find whether physicians in other parts of the country are thinking along the same lines.

DR. RICHARD S. WEISS, St. Louis: I wondered about the basal metabolic rate in the second case. The skin felt doughy and myxedematous. There have been cases of myxedema with scaliness of the skin. I wondered whether the patient had a low basal metabolic rate and whether she would have better results with thyroid medication.

DR. HERBERT RATTNER, Chicago: I thought the first case was a typical one of vitamin B deficiency. As to perlèche, there is a case at Michael Reese Hospital in which the condition responded to treatment with riboflavin, without topical treatment.

Gold Dermatitis and Stomatitis.

L. C., a white woman aged 46, has been treated in the arthritis unit of the department of internal medicine for chronic rheumatoid arthritis. Aside from the arthritis her past history revealed only occasional attacks of hives.

Between Aug. 24 and Nov. 27, 1939 she received weekly intramuscular injections of sodium gold thiomalate (myochrysine), totaling 1,010 mg. After each of the last three injections congestion of the conjunctiva, lacrimation and smarting of the eyes developed. Two weeks after the last injection an infection of the upper part of the respiratory tract and sore mouth developed. One month after the last injection she noticed scaling of the scalp, loss of hair and an eruption.

Examination on Jan. 4, 1940 revealed a nonerythematous, patchy, dry, scaling eruption on the scalp, a papulosquamous eruption over the trunk and well defined erythematous, keratotic plaques on the palms. The buccal mucous membranes and lips revealed superficial small ulcers. The breath smelled foul and metallic. There has been gradual improvement to date.

A blood count on Jan. 4, 1940 showed 80 per cent hemoglobin and 4,450 leukocytes per cubic millimeter, with a differential count of 77 per cent neutrophils, no basophils, 2 per cent eosinophils, 18 per cent lymphocytes and 3 per cent monocytes. There was no stippling of the erythrocytes, and the number of platelets was adequate. The urine was normal.

DISCUSSION

DR. UDO J. WILE, Ann Arbor, Mich.: The department of medicine of the University Hospital has a substantial endowment for the study of arthritis. Large amounts of gold preparations have been given in the treatment of various arthropathies, and for this reason several cases of gold dermatitis have been observed. In some of these there is a striking resemblance of the eruption to pityriasis rosea. Dr. Courville has been assigned to the study of this entity and will tell what he has found.

DR. CHARLES J. COURVILLE (by invitation), Ann Arbor, Mich.: Gold compounds have been used for the past twenty years in the treatment of pulmonary tuberculosis, arthritis and lupus erythematosus. For the first two conditions large doses have been employed, varying between 100 and 500 mg. Of a series of 900 cases of arthritis treated with gold (Hartfall, S. J.; Garland, H. G., and Goldie, W.: *Lancet* **2**:784 [Oct. 2]; 838 [Oct. 9] 1937) 29 per cent had some type of cutaneous reaction. There is evidence to support the belief, as Dr. Wile suggests, that the high incidence of toxic cutaneous manifestations in this group is due to the large dosage. The cutaneous reactions have been described by many observers as generalized pruritus, erythema, urticaria or a papular, squamous or eczematoid condition. More unusual forms are lesions suggesting lichen planus, giant urticaria, herpes simplex and herpes zoster. I have found reports of 2 cases in which the condition resembled pityriasis rosea. Stomatitis of varying degrees of severity has frequently been described.

I have recently observed 6 cases of dermatitis occurring during administration of gold sodium thiomalate for arthritis. In 2 of these there were eruptions similar to pityriasis rosea. The drug has been given cautiously, beginning with 10 mg. and increasing to 100 mg., intramuscularly. The blood counts and results of urinalysis have been carefully watched.

The patients in whom toxic reactions developed have not all shown significant lowering of leukocytes. The leukocyte count of the patient presented on the day of her first injection of a gold compound was 4,800 per cubic millimeter. This fell to 3,600 per cubic millimeter after six weeks of treatment and fluctuated between this figure and 4,700.

At the onset of the first symptoms of intolerance to gold, the leukocyte count was 3,500 per cubic millimeter, the lowest noted, but it rose in spite of further gold therapy. The eruption appeared one month after her last injection. Perhaps this fall in the white cell count may be considered significant.

DR. THEODORE CORNBLEET, Chicago: It would be interesting to examine the sections of the skin under the dark field to see if there are any deposits of gold.

DR. CLARK W. FINNERUD, Chicago: I should like to inquire whether any cases of gold reaction have been described in which there were seborrheic dermatitis-like or yeastlike forms of involvement of the angles of the mouth, nose or eyelids, or of the umbilicus, ears and scalp, with pseudoatrophy of and in the vicinity of the axillas. It should be easy to determine whether yeast is also etiologic in the stomatitis.

DR. E. A. OLIVER, Chicago: I was surprised to find that Wise and Sulzberger, in "The 1939 Year Book of Dermatology and Syphilology," note that they believe that gold therapy should be superseded by the administration first of

a bismuth compound in all cases of discoid lupus erythematosus. They expressed the opinion that only in the cases in which all other treatment, including the bismuth therapy, had been given a fair trial and had failed is one warranted in administering a gold preparation.

DR. RICHARD S. WEISS, St. Louis: I have not had a great deal of experience with bismuth treatment, but in a small series of patients a few were apparently benefited. It seems to be similar in action to the gold therapy, but the results are not as good. I noted that this patient has had a consistently low leukocyte count. What constitutes a normal leukocyte count is a problem and a point of controversy among hematologists. There is apparently no normal value for any one person. It is exceedingly difficult to establish the base line. In the paper which Lane, Bagby and I presented (Weiss, R. S.; Lane, C. W., and Bagby, J. W.: Effect on the Leukocytes of Therapy with a Gold Preparation, ARCH. DERMAT. & SYPH. **35**:1074 [June] 1937), we tried to do so, and we found from a study of hematologic literature that there were many opinions. We finally concluded that we would take the median rather than the "normal" from all the statements in the literature, and we chose 8,000. When a patient has a leukocyte count as low as 5,000 per cubic millimeter I feel that gold therapy is contraindicated and that it should be given with utmost caution. It has been my experience that a patient who starts treatment with a low leukocyte count tolerates gold poorly. I should not say that the patient under consideration tolerated gold poorly; she appeared to be getting a large dose. It is my feeling that when the leukocyte count is low the patient is much more apt to have a reaction, and therefore some other method of treatment should be used.

DR. HERBERT RATTNER, Chicago: I have observed in the same person a pityriasis-rosea-like eruption during the course of treatment with gold and again during treatment with bismuth.

DR. OTTO FOERSTER, Milwaukee: This represents a new type of dermatitis due to gold. The usual feature of hemorrhages in the gums indicates again that gold is toxic for endothelial cells.

Localized Amyloidosis of the Legs. Presented by DR. UDO J. WILE, Ann Arbor, Mich., and DR. A. E. SCHILLER, Detroit.

L. B., a man aged 45, noted a pruritic patch on the lower part of his right leg in the summer of 1938, which disappeared with exposure to the sun during the summer. After his fifth operation on the stomach since 1922 (resection in October 1938), the eruption reappeared, involving almost the entire leg. This again disappeared during the summer of 1939, only to recur with bilateral involvement in the fall. An intradermal test with congo red, performed at Grace Hospital, Detroit, two weeks ago, caused redness of the papules in that area. He has complained of a pruritic papular eruption on the arms, axillas, trunk and inguinal region since beginning to take nicotinic acid three months ago.

The patient has two unrelated cutaneous conditions, but he is being presented only for consideration of the eruption on the legs. The skin of the legs is thickened, firm and studded with many pinhead-sized to glass pinhead-sized, flesh-colored papules, some of which are covered with a fine, tightly adherent scale. The papules are discrete, but are grouped in some areas. In addition, there is a generalized pigmented papular and excoriated eruption involving the arms, axillas, trunk, buttocks and inguinal region.

The Kahn reaction of the blood was negative.

Localized Amyloidosis of the Tongue, Pharynx and Eyelids.

N. H., a white man aged 62, gives a history of attacks of sore tongue and sore throat since the age of 20. These would clear up with local treatment alone, only to recur within six months to a year. The condition had been diagnosed as syphilis, and he had received a few injections of arsphenamine, without improvement.

He was first seen at the University Hospital in 1919, at the age of 42. A clinical diagnosis of syphilitic glossitis was made, although the results of serologic examination were negative. The patient was given antisyphilitic therapy at the outset, and the ulcers on the tongue and pharynx healed. During the next three years he received a total of sixteen intravenous injections of arsphenamine, several full courses of mercury rubs and a large amount of potassium iodide. The serologic reactions remained negative, although new crops of ulcers appeared. In 1925 the patient had an attack of "yellow jaundice."

In 1931 he returned with another attack of "sore tongue." At this time he presented involvement of the hard and soft palate, and around the ulcers on the tongue were seen for the first time small yellowish nodules. Histologic examination showed an inflammatory papilloma containing much hyaline material, apparently resulting from hyaline changes in vessel walls. At this time he also presented numerous small nodules on the eyelids. From 1931 to 1934 he received twenty-seven intramuscular injections of bismuth subsalicylate, 2 grains (0.13 Gm.), together with potassium iodide, with no appreciable effect on the lesions.

At present the patient presents diffuse involvement of the tongue, hard and soft palate, pharynx and larynx. This is nodular and is definitely yellow. A destructive lesion is present in the left tonsillar region. Small nodules are also present along the margins of the lid. The patient also presents dry, atrophic skin of the hands, face and ears.

Numerous Kahn reactions of the blood have all been negative.

DISCUSSION ON CASES OF LOCALIZED AMYLOIDOSIS

DR. UDO J. WILE, Ann Arbor, Mich.: The lesions in the mouth of this patient were at one time ulcerated, and, notwithstanding the negative serologic reaction, he was treated for gumma of the tongue. While the lesions in the mouth and on the tongue are hard and boardlike, as in amyloid diseases, the lesions on the elbows, knees and eyelids do not in any way resemble other known examples of cutaneous amyloidosis.

A Case for Diagnosis (Erythema Figuratum Perstans?).

H. M., a girl aged 17, was previously presented before the Detroit Dermatological Society in April 1939 (Wile, Udo J., and Belote, G. H.: A Case for Diagnosis, ARCH. DERMAT. & SYPH. **40**:681 [Oct.] 1939).

DISCUSSION

DR. FRANCIS E. SENEAR, Chicago: I do not believe that this case can be classified as one of erythema perstans. First, the lesions are much larger than those usually seen in that disease. Second, each one of the lesions has increased in size slowly, and none of them has shown any tendency to disappear. The lesions of erythema centrifugum individually run a much slower course. Third, there is a considerable amount of crusting and scaling about the margins of these lesions, and this element is entirely lacking in the description of erythema perstans by Darier. It is true that Gougerot has described cases in which there were scaling and even vesiculation at the periphery, but certainly not to the extent to which it is present here.

While I am not at all certain as to the diagnosis, I think that a superficial type of late syphilis must be considered. The patient states that the lesions itch, but this is minimal and intermittent. The only other possibility that occurs to me is that the condition might be an annular type of psoriasis.

DR. GEORGE H. BELOTE, Ann Arbor, Mich.: The serologic reaction was negative six months ago. At the time this patient was presented last year she had been seen earlier by one of the members, who thought the condition looked like pityriasis rosea. When I saw her at the meeting in Detroit the condition looked like atypical psoriasis. It has taken on certain features which are unusual for psoriasis. At present I admit that I am not fully convinced what this condition is; I do not believe it is syphilis. As a matter of fact, active syphilis

in patients with negative Wassermann reactions are rarely seen in this hospital. I am not certain whether the condition is atypical psoriasis, as Dr. Senear has suggested, and am not at all convinced that it does not belong in the group of annular psoriasis, where it was placed tentatively.

A Case for Diagnosis (Pruritic Melanoderma of Undetermined Origin).
Presented by DR. H. J. PARKHURST, Toledo, Ohio.

A. D., a man aged 68, has lived alone in a cabin and subsisted on relief provisions and on what he has earned by doing occasional gardening and odd jobs. Aside from the diseases of childhood, he has had no illnesses, except asthma of undetermined origin, which had been present at all seasons since he was 10 years old. Cutaneous tests with foods and grasses have given negative reactions. For the last eight years, in order to relieve the asthma, he has mixed mullein (Verbascum thapsus) and jimson weed (Datura stramonium) and smoked the mixture several times every day. For at least three years there has been severe itching of the face, ears, neck, hands, lower portions of the arms and the forearms; at times the ankles and other areas have also been involved. The exposed surfaces have become moderately lichenified and dark brown. This condition was fairly sharply limited to the areas mentioned, the rest of the cutaneous surface being of the moderately dry senile type, with moderate senile hyperpigmentation in the usual locations. The upper third of each ear was considerably thickened. Inside the left cheek, in the molar area, there was a fairly well outlined, pea-sized, slate-colored macule. There was no glossitis. There was slight enlargement of some of the cervical, axillary and inguinal lymph nodes, but this was not pronounced. The physical examination revealed nothing noteworthy, and the spleen was apparently not enlarged. The blood pressure was 140 systolic and 90 diastolic in 1937, 138 and 75 in 1938 and 120 and 70 in 1939. There has been little impairment of physical strength. The urine has shown no abnormality. The blood count during these years has maintained an average of about 4,000,000 erythrocytes per cubic millimeter, with a hemoglobin percentage of 75 to 80, and the total leukocyte count has been between 5,200 and 13,000, and more recently between 8,000 and 9,500 per cubic millimeter. The proportions of the white cells were normal except for constant moderate eosinophilia (from 3 to 16 per cent eosinophils and, more recently, from 4 to 8 per cent). The Wassermann reaction was repeatedly negative.

In October 1939 skin from the forearm and an inguinal lymph node were removed for histologic study. Dr. T. L. Ramsey gave the following report: "In the sections of skin the epidermis was somewhat thinned but moderately hyperkeratotic. There were granules of pigment in the upper part of the derma which gave a positive dopa reaction. There was definite infiltration of reticulohistiocytes in the upper part of the derma and the papillae, especially perivascular, with some edema. In the lymph node the normal glandular architecture seemed somewhat distorted. There were diffuse edema and considerable interstitial fibrosis; the germinal centers appeared indistinct, and there was a definite increase in the reticulum. There appeared to be a marked increase in large cells of the endothelial type, and many large mononuclear cells were present. Some areas showed proliferation and infiltration with fibroblasts. Granules of brownish pigment were scattered throughout the reticulum which gave a positive dopa reaction. There was a definite increase in thickness of the fibrous capsule."

Dr. S. W. Becker, of Chicago, gave this report: "We have studied the sections . . . and believe that they can be interpreted as follows: The patient evidently has a generalized pigmentary disease which cannot be classified with any of the common melanotic eruptions. Owing perhaps to coexisting dermatoses, the melanin has been absorbed in the lymph and is deposited in histiocytes in the dermis. There is also some melanin in histiocytes in the lymph nodes. I believe that this large number of histiocytes, or reticuloendothelial cells, has been evoked merely to take care of the excess of melanin and cannot be considered as a primary change."

During the past three years the patient has spent several months in the hospital at various times, and diagnoses of pellagra, Addison's disease, photosensitization and benign hyperplastic cutaneous reticulohistiocytosis with melanoderma (Baccaredda) have been considered and excluded by therapeutic tests and observation. The following theory is now tentatively presented: Mullein is known to be a rubefacient, and the patient's skin reacts positively to it in patch tests, as would be expected. His face, neck, hands and forearms are especially exposed to it when he is at home. When jimson weed is smoked, the nervous system is affected as by atropine, and the cutaneous innervation is included, with a possible effect on the formation of pigment. Perhaps this might explain the localized pigmentation and histiocytic reaction in areas irritated by mullein.

DISCUSSION

DR. HARRY R. FOERSTER, Milwaukee: A photosensitization reaction is suggested by the intensity of the pigmentation on exposed parts. The pigmentation on the covered parts is moderate and may be due to senility and vagabondism. The absence of pruritus and of chronic infiltrated dermatitis in the exposed areas of the forearms, hands, neck and face is against a diagnosis of allergic sensitization. Addison's disease has been ruled out, and if the condition were a pellagrous manifestation due to a vitamin deficiency, this would probably have been disclosed during his period of hospitalization. It is known that the ingestion of certain plants may produce photosensitization in domestic animals. May not the condition in this case be a similar type of photosensitization through swallowing juice of the weed mixture which was smoked?

NOTE.—It was later suggested to Dr. Parkhurst that the patient's living environment made photosensitization from coal dust a possibility.

DR. H. J. PARKHURST, Toledo, Ohio: I had considered the possibility of photosensitization but felt that it was excluded because of the fact that the patient had received generalized ultraviolet radiation for some time, without apparent aggravation of the cutaneous condition. Prolonged treatment in the hospital seemed to exclude the possibility of vitamin deficiency as an etiologic factor.

NEW YORK DERMATOLOGICAL SOCIETY

FRANK C. COMBES, M.D., *President*

J. GARDNER HOPKINS, M.D., *Secretary*

March 26, 1940

A Case for Diagnosis (Mikulicz' Disease?). Presented by DR. GEORGE M. MACKEE.

Miss F. D., a stenographer aged 35, a private patient, gives a rather irrelevant past history. She had a gallbladder operation and an appendectomy in 1923. She is of somewhat nervous temperament. The menses have always been regular but exceedingly scanty, lasting only an hour or two. In May 1939 her friends called her attention to a swelling of the cheeks. This was not preceded by or associated with any illness. There has been a slow, progressive increase in the swelling. At times the swelling is worse than at other times, but there have been no definite exacerbations and remissions. There has been no evidence of inflammation, such as heat or redness, and there has been no fever. There has been no difficulty in opening the mouth. There has been no hyperesthesia, hypoesthesia or perceptible change in the salivary secretion. The patient has neither gained nor lost weight. She received from other physicians injections of various kinds, probably for the scanty menses. These injections had no apparent effect on the swelling of the cheeks. At one time the swelling was aspirated, probably because

the physician thought there was a cyst. No fluid was obtained. Two roentgen ray treatments had been given at weekly intervals, each treatment consisting of ¼ erythema dose, the filtration being 3 mm. of aluminum. The treatment was discontinued because of lack of confidence.

The patient presents a poorly outlined, boggy swelling of the cheeks about the size of a palm. The edges of the swelling are perceptible by palpation. The mass lies over the ascending ramus of the jaw down to the mandible, extending upward in front of the ear and forward to about the center of the cheek. There is no visible evidence of inflammation. There is absolute symmetry, even to a dimple or dell in the center of the mass. There is no pitting on pressure. The skin overlying the tumors has a normal appearance. The interior of the mouth is normal. The swellings give to the patient a peculiar appearance. The jowls look heavy. The swellings have, perhaps, a thickness of 1 cm.

The diagnoses that have been considered are: some form of lipodystrophy, panniculitis, angioneurotic edema, dermatomyositis and particularly some chronic condition of the parotid glands.

DISCUSSION

DR. EUGENE F. TRAUB: If this involvement is of the parotid gland, and there seems to be some question as to where these boggy swellings actually lie, I think it is an example of Mikulicz' disease, of which I have encountered 1 or 2 cases. It is most easily recognized, of course, when there is bilateral involvement of the lacrimal glands as well as of the parotids, and frequently the submental glands are also involved. Here there is involvement only of the parotid glands—if the swelling is in the parotid glands and not in the skin or subcutaneous tissue.

DR. GEORGE C. ANDREWS: I am inclined to agree with the diagnosis of panniculitis.

DR. J. GARDNER HOPKINS: It seems to me that the lesion is in the skin or attached to the skin. The skin does not move over the lesion as it would if it were in the parotid gland. The presenter has suggested all the possibilities. There is some resemblance to the case recently presented by Dr. Andrews of panniculitis following lupus erythematosus (ARCH. DERMAT. & SYPH. **41**:965 [May] 1940). Some form of lipodystrophy seems the most likely diagnosis.

DR. PAUL E. BECHET: The two indurated areas are symmetric and even uniform in size. Even the dimpling is exactly similar in location on the two sides. It seems to me that this should constitute presumptive evidence that the parotid glands are affected.

DR. EDWARD R. MALONEY: I agree with Dr. Hopkins. The lesions seem to be in the skin or subcutaneous tissue, and there is no evidence that any glands, the parotid or any other, are involved. In spite of the fact that there is no history of attacks of erysipelas, it seems to me that a good clinical diagnosis would be solid edema, which is a diagnosis which Dr. MacKee has also considered. I should make that diagnosis in this case.

DR. J. FRANK FRASER: I agree with Dr. Maloney's view that this case is one of solid edema. One cannot be sure of the causative factors. If the parotid glands were involved one should expect more swelling under the mandible and beneath and behind the ear. A biopsy of deep tissue might be helpful.

DR. R. H. RULISON: I think the condition is in the skin or subcutaneous tissue and not in the gland. In my opinion the diagnosis of sclerema or scleroderma is the most likely one.

DR. A. BENSON CANNON: If the duct were functioning normally, could one not inject a dye into it and take a roentgenogram to see if the swelling is not really in the glandular tissue?

DR. FRANK C. COMBES: I doubt that the condition involves the parotid glands, in spite of its absolute symmetry. I have had 2 cases in which I made a diagnosis of Mikulicz' disease, 1 with a tumor on one side and the other with tumors on both sides. In 1 case I gave two treatments with roentgen rays, giving ½ erythema dose, well filtered. There was no improvement at the end of two months. I sent the patient to a surgeon, who made an incision and found

that the facial nerve went through the gland. He closed the wound without doing anything. In the course of the next two months the condition cleared up entirely. The tumors were bilateral in the other case. I gave two suberythema doses of roentgen rays, and outside of a little dryness of the mouth, which lasted for about two months, the lesions cleared up entirely. In the first case I mentioned, the tumor was hard and shotty, much like a cyst; in fact, I tried to aspirate it, without success. In the second case the tumor was found beneath the mandible and all the way up the side of the face. At the same time the patient complained of pain in the back of the neck. When the parotid gland swells, of course, it is likely to change its anatomic position.

DR. GEORGE C. ANDREWS: Did the patient of Dr. Combes exhibit dryness of the mouth before treatment? Dryness of the mouth, of course, is a symptom of the disease. Did the treament relieve it?

DR. FRANK C. COMBES: No. The dryness of the mouth was not present before but occurred only after the treatment with roentgen rays.

DR. EDWARD R. MALONEY: Mikulicz' disease is more common among Negroes.

DR. GEORGE M. MACKEE: The diagnosis is difficult, and also it is difficult to determine the anatomic position of the condition. The perfect symmetry and limitation to the position of the parotid glands strongly suggest a parotitis of some kind, possibly Mikulicz' disease, a condition with which I am unfamiliar. The fact that the skin and the subcutaneous tissue appear to be involved may indicate solid edema or some form of lipodystrophy, unless the inflammation of the parotid glands has spread to the overlying tissue.

Reticulated Pigmented Poikiloderma of Civatte. Presented by DR. GEORGE C. ANDREWS.

Mrs. L. M., aged 46, first noticed lesions about the neck, in the upper sternal region and on the back in January 1939 after wearing a new black fur collar. There was some redness and itching of the lesions at first, but now she notices only a burning sensation when clothing of any type touches the neck. The patient's general health has been good, and there have been no past illnesses of significance. Her menses stopped in November 1939.

The eruption consists of a network of pigmented and atrophic spots rather symmetrically arranged, on the neck and sides of the face. The lesions are macular and reddish brown, with a tendency at times to scale and show telangiectasia.

Treatment has consisted of six doses of 10,000 units of estrone (theelin), five treatments of 50 r each of unfiltered roentgen rays to the affected parts and some external medication. This treatment has apparently diminished the subjective symptoms but has had no influence on the appearance of the lesions.

DISCUSSION

DR. J. FRANK FRASER: I agree with the diagnosis as presented.

DR. EUGENE F. TRAUB: I do not wish to disagree with the diagnosis as presented; but conditions like this are seen often in many persons on the exposed area of the neck and chest. In addition, in this particular case I did not see any annular lesions or tiny papules, which are supposed to occur occasionally with this condition. There are no white spots and no special configuration. I should like to know, therefore, how one can say that this case is one of poikiloderma when there are many women, particularly those who wear V-necked dresses, who present this type of change in the skin? I should like to ask whether there is any way of telling when one has poikiloderma of Civatte and when one has not.

DR. PAUL E. BECHET: I have always been interested in dermatoses in which actinic light might play an etiologic role. Is Civatte's disease a member of this group? Or can it be attributed to endocrine dysfunction? The points in favor of the latter are few. They rest on its predominance in women, particularly at the menopause, its occasional tendency to regress under the influence of hor-

monal therapy and the presence of telangiectasia. On the other hand, the evidence that Civatte's disease is due either to hypersensitivity to light or to overexposure to light is, in my opinion, overwhelming. Telangiectasia can be caused by overexposure to light. It is a common occurrence on the faces of sailors and farmers. If Civatte's poikiloderma is not due to actinic light, why does it almost always occur on the face and neck, areas of the body which are most frequently exposed to the sun? I have often observed fishermen, sailors and farmers with reticulated pigmented telangiectatic patches on the neck identical with areas of Civatte's disease. If Civatte's disease is not an actinic dermatitis, why is it classed in a number of textbooks as a synonym of Riehl's melanosis? Despite the fact that Dr. Andrews' patient says that she has never been exposed unduly to sunlight, I have observed large lentigenes on the upper part of her back. She has, besides, pearl white skin, which is usually sensitive to light.

DR. GEORGE M. MACKEE: I agree with the diagnosis. Mild attacks of the disease are common in women. Usually the condition is limited to the sides of the neck, but occasionally it may involve the entire face, neck and a portion of the chest, even parts that are seldom, if ever, exposed to direct or indirect sunlight. It may or may not be accompanied by "farmer's skin," and it may be mistaken for "farmer's skin." As I know the disease, it consists of yellowish brown pigmentation with more or less telangiectasia and some atrophy. The color varies somewhat in accordance with the relative amounts of pigment, telangiectasia and atrophy. The cause may be exposure to the sun's rays, but this has not been proved. I have always regarded this progressive condition as an entity.

DR. EDWARD R. MALONEY: I think there may possibly be something in what Dr. Bechet has said about hypersensitivity to light in these cases, but I think there is something more than that. Most patients with this condition have avitaminosis too and should be studied from that point of view also. The eruption is somewhat analogous to the eruption seen in patients with pellagra. I think avitaminosis is at the basis of this condition, and hypersensitivity to light may have something to do with it.

DR. EUGENE F. TRAUB: According to most of the textbooks, for instance the one by Sutton, melanosis of Riehl is included as being the same process as poikiloderma of Civatte. The original description given by Civatte (*Ann. de dermat. et syph.* **4**:605, 1923) portrayed lesions which began on the forehead and spread down on the cheeks. The region about the eyes and mouth remained clear. Later the lesions extended down on the neck and in some cases down on the arms. Civatte described the reticulated appearance of the skin with small erythematous patches varying up to 1 cm. in size. The areas underwent atrophy with some pigmentation. Some telangiectasia appeared in the areas. Graham Little more recently reported a series of cases in which with a single exception the condition occurred in women, especially those of menopausal age. In these patients the eruption was distributed over the face, the neck and the upper portion of the chest and shoulders. In his opinion if there was any one feature that might be designated as characteristic, it was the reticular network consisting of tiny inflammatory papules covered with a little scale. Some of the patients presented white spots, while others showed considerable pigmentation. Areas of telangiectasia and atrophy were present in a number of cases. While not all of these symptoms are necessarily present in every case, most of the patients present a fair number of these features.

DR. GEORGE C. ANDREWS: Why does Dr. Traub think this case does not fit in with that description?

DR. EUGENE F. TRAUB: In this case I did not see any tiny papules, scaling or evidence of an erythematous eruption, and I was not at all certain of the presence of atrophy, real reticulation or white spots, such as I have just mentioned as having been described by Civatte.

DR. GEORGE M. MACKEE: I have never seen desquamation in cases of this disease.

DR. GEORGE C. ANDREWS (by invitation): In bright daylight I examined this patient closely and studied the condition. She shows reticulated lesions in well defined patches in normal skin. That, it seems to me, would tend to rule out actinic dermatitis. The patches themselves consist of brownish pigmentation and definite white patches of distinct atrophy. There are areas of telangiectasia, and some of the erythematous spots are a little scaly, although scaling is insignificant. To my mind this is the most striking and definite example of poikiloderma of Vivatte I have ever seen. The age of the patient and the character and progression of the lesions are characteristic. As Dr. MacKee said, I never heard of the papules and annular lesions mentioned by Dr. Traub. I believe poikiloderma of Civatte is a definite entity. I think it is an idiopathic atrophy of the skin. I questioned this patient about vitamins. She has a good appetite and eats liberally. There is no sign of a vitamin deficiency. The tongue is not glazed. She has no anemia. She gives no history of exposure to strong sunlight. She leads a sedentary indoor life.

DR. GEORGE M. MACKEE: There seems to be a difference of opinion as to just what constitutes this disease. Dr. Traub has just read a description of it from Sutton's book. I do not agree with that account. Riehl's melanosis was mentioned in that description as being identical with poikiloderma of Civatte. That certainly is not my conception. Riehl's melanosis consists simply of pigmentation, with no atrophy or telangiectasia. I agree with Dr. Andrews that this case is a typical one of poikiloderma of Civatte, although the condition is unusually extensive.

DR. EUGENE F. TRAUB: I mentioned Civatte's original description and the case reports of Graham Little, which I investigated some time ago simply because the features stressed by these two authors as being so characteristic and essential did not seem to me to be characteristically present in this case.

DR. EDWARD R. MALONEY: I agree with the clinical diagnosis as presented.

DR. GEORGE C. ANDREWS: I feel as Dr. MacKee does, that Riehl's melanosis is an entirely different picture, with a different distribution and different course.

DR. FRANK C. COMBES: I think that Riehl was the one who made the statement that the cases of poikiloderma of Civatte were the same as his. I imagine myself that the two conditions are distinct. Riehl considered that the condition in his original cases was identical with that in those later described by Civatte.

Acne Aggregata seu Conglobata. Presented by DR. PAUL E. BECHET.

S. S., a girl aged 10 years, was brought by her mother to the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital today. She presented innumerable comedos and double comedos, papules and pustules and follicular and perifollicular inflammatory infiltrations, covering most of the cheeks and forehead. The scarring is extremely severe and consists of depressed, reddened, crateriform cicatrices varying from 0.5 to 1 mm. in diameter. The eruption has been present for one year. The child is thin, pale and emaciated and seems to be in poor health. The case is presented because of the unusual severity of acne, with extensive scarring and resulting disfigurement, beginning at the age of 10 years.

DISCUSSION

DR. EDWARD R. MALONEY: This case seems to me to be a typical one of acne pustulosa or acne vulgaris. I do not see why such a lengthy name was given to it. I should call it a case of acne vulgaris in a young girl. Ten years of age is young for this condition.

DR. R. H. RULISON: I thought the condition was precocious acne.

DR. GEORGE M. MACKEE: I agree with Dr. Maloney that this case is one of severe acne vulgaris or acne indurata, which are the same thing. I do not think the condition is severe enough to be called acne conglobata or the pyoderma faciei of O'Leary.

DR. FRANK C. COMBES: I agree with the previous speakers.

DR. PAUL E. BECHET: In presenting this patient with a diagnosis of acne aggregata seu conglobata, I had no idea of confusing the members of this society with a new and long name or pretending that the condition was a rare type of acne. The term was used by Ormsby (Ormsby, O. S.: Diseases of the Skin, ed. 5, Philadelphia, Lea & Febiger, 1937, p. 1184) to describe an acne characterized in its early stages by the presence of innumerable comedos and double comedos, papules, pustules and follicular inflammatory infiltrations, with resulting extremely severe variola-like scars. In the later stages of this disease, large indolent sebaceous, multilocular abscesses and large dusky red, elevated, fluctuating plaques with enormous scarring, at times keloid-like in character, occur. My only reason for the presentation is the age of the patient and the severity of the condition at such an early stage. Allowed to remain untreated, such an acne can result in permanent and extensive disfigurement. In my experience it almost always occurs in anemic, cachectic, emaciated, "run down" persons usually of the preadolescent or adolescent age. In my opinion it is a clinical entity and is not an exaggerated form of indurated acne, nor is it tuberculous or tuberculoid. The foregoing description exactly fits the clinical picture exhibited by this girl.

A Case for Diagnosis (Seborrheic Dermatitis? Parapsoriasis? Cutaneous Manifestation of an Endocrine Dysfunction?). Presented by DR. PAUL E. BECHET.

E. M., a girl aged 4 years, was brought by her mother to the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital for the relief of an extensive eruption on the upper eyelids and on the angles of the chin, arms, trunk and legs. The mother states that the eruption has been present for two years. The lesions consist of erythematous, scaly, plaquelike, irregular but sharply marginated patches. On the trunk some of the patches consist of grouped, exceedingly small hyperkeratotic lesions. They are definitely not confluent, and the intervening skin is normal in appearance. The child is much overweight. She has the characteristic moonlike face and the usual distribution of fat so frequently observed in persons with dystrophia adiposogenitalis. There is no history of ingestion of drugs. The histologic observations were not significant.

DISCUSSION

DR. GEORGE M. MACKEE: I will make a tentative diagnosis of eczema of unknown variety and of unknown cause, because of the patches of eczematoid dermatitis and because of the follicular element on the abdomen. I also am thinking of the possibility of parapsoriasis or even of an aberrant psoriasis.

DR. EUGENE F. TRAUB: It seems to me that this girl has unusually dry skin in general, with certainly an exaggerated keratosis pilaris or something akin to that. I wonder if some of those follicular keratotic plugs are not due to congenital dryness of the skin, as seen in mild xeroderma with associated keratosis pilaris, which perhaps may account for the fact that the lesions are so dry and scaly. In addition, she may have an eczema which because of the excessively dry skin assumes this peculiar pcture. The only other dagnostic possibility that suggests itself to me, and that because of the peculiar lesions on the chin and around the mouth, is that this condition is psoriasis, which at the present time is atypical.

DR. EDWARD R. MALONEY: Dr. MacKee has expressed in a much better way than I could have myself my opinion in this case.

DR. J. FRANK FRASER: Dr. Traub has mentioned keratosis pilaris. This condition may accompany other dermatoses. The history of two years' duration, with disappearance in the summer, and the appearance of the lesions, especially those adjoining the mucous membranes, with well demarcated borders suggest the diagnosis of an aberrant psoriasis. On the other hand, the involvement of the commissures points to the possibility of a fungous infection, possibly moniliasis. I should like to ask whether any mycologic study has been made.

DR. R. H. RULISON: Dr. Fraser has said almost everything I had in mind about this case. I think that the most likely diagnosis is moniliasis, and my next choice would be psoriasis.

DR. FRANK C. COMBES: My interpretation of this case is more in agreement with what Dr. Traub has said. According to the history I received from the child's mother, these patches of keratosis pilaris on the abdomen are of more recent occurrence. The patches that are more acutely inflamed appeared similar to those on the abdomen now, and after the application of various salves they assumed their present appearance. I do not agree that this condition is Fröhlich's syndrome; the patient is too young for that, but I think there is a strong probability that she has hypothyroidism, which would account for the dryness of the skin and for the keratosis pilaris. Skins like this are prone to eczematous reactions, particularly in cold weather. In the summer, I understand, these lesions disappear entirely. Of course, psoriasis in most cases also has a tendency to disappear in the summer on exposure to the sun. These patches do not have the distribution or appearance of psoriasis. They seem to be deeper than what one expects in psoriasis, and there is a suggestion of a crust on the lesions rather than a scale. Although I can see no evidence of vesiculation and the patient did not complain of any itching, the condition seems to me like chronic or subacute dermatitis or eczema.

DR. PAUL E. BECHET: I had the same difficulty in making a diagnosis as that of most of the members. I did not consider moniliasis. My impression in reference to Fröhlich's syndrome differs from that of Dr. Combes. I will grant that the patient (4 years old) is possibly too young to show signs of pituitary dysfunction. On the other hand, I have seen typical dystrophia adiposogenitalis at the age of 10 or 13 years, with a history of the onset of the disease five or six years previously. The patient under discussion has the moon face and the usual distribution of fat of Fröhlich's syndrome. The fat is precocious, and the condition does not resemble the usual picture of an obese child. In my opinion it is not possible to make a definite diagnosis without further investigation. On the other hand, I have noticed, oddly enough, in several instances of Fröhlich's syndrome in preadolescent children the same follicular keratosis which this little girl presents on her abdomen. This follicular keratosis resembles the early lesions of pityriasis rubra pilaris. One of my patients, a boy aged 13, with definite pityriasis rubra pilaris and well advanced dystrophia adiposogenitalis, was given ½ grain (0.03 Gm.) of posterior pituitary three times daily. There was decided improvement in both the eruption and the hypopituitary condition within a few weeks. I feel that it might be possible that the keratotic lesions on this patient's abdomen are related to hypofunction of the hypophysis cerebri.

Panniculitis Following Lupus Erythematosus. Presented by DR. GEORGE C. ANDREWS.

W. L., a woman aged 29, was presented before this society on Dec. 19, 1939 (ARCH. DERMAT. & SYPH. **41**:965 [May] 1940).

Since the presentation of the patient, I have reviewed the histologic section and made further search for actinomyces. There have been cultures and direct smears, which have been negative. The histologic section showed nothing except signs of an inflammatory condition in the fat. Clinically the condition is unchanged. Fractional roentgenotherapy to the infiltrated area has been started just recently.

Epidermolysis Bullosa Acquisita. Presented by DR. PAUL E. BECHET.

L. M., a woman aged 43, was presented before this society on Jan.. 23, 1940 (ARCH. DERMAT. & SYPH. **42**:210 [July] 1940).

When this case was presented, a diagnosis of dermatitis herpetiformis was made by some of the members. The histologic examination showed the characteristic lesions of epidermolysis bullosa with loss of elastic tissue on special

stains. The patient still attends the clinic and constantly shows lesions acquired through trauma. She went bowling one evening and the next day had two large bullae on the index finger and thumb from pressure of the ball. I believe that this case is a bona fide one of epidermolysis bullosa of the acquired type. The patient has been given chorionic gonadotropin (antuitrin S) and is showing some improvement.

DISCUSSION

DR. GEORGE M. MACKEE: In support of Dr. Bechet, I will say that I have seen the patient two or three times since her presentation here, and I can verify the fact that the lesions certainly are on the areas which are frequently traumatized, and they apparently do not occur spontaneously but only as a result of trauma. I finally came to the conclusion that Dr. Bechet was correct in calling this condition epidermolysis bullosa acquisita.

PHILADELPHIA DERMATOLOGICAL SOCIETY

J. V. KLAUDER, M.D., *Chairman*

HERMAN BEERMAN, M.D., *Secretary*

April 19, 1940

"Open Bite" in Association with Prenatal Syphilis. Presented by DR. BERTRAM SHAFFER.

C. J. S., a healthy Negro boy aged 12 years, has a somewhat suggestive facies, bilateral palpable epitrochlear lymph nodes, an external squint of the left eye, hutchinsonian incisors and the peculiar dental deformity for which he is presented. The anterior part of the upper dental arch is raised, so that it is impossible to bring the upper and lower incisors into approximation. A diagnosis of congenital syphilis was made on Dec. 31, 1927, because of a positive serologic reaction of the blood and roentgenographic evidence in the long bones. He was treated until 1933, with thirty-three injections of sulfarsphenamine and forty-four injections of bismuth and potassium tartrate. Examination of the cerebrospinal fluid on Jan. 23, 1940 gave negative reactions.

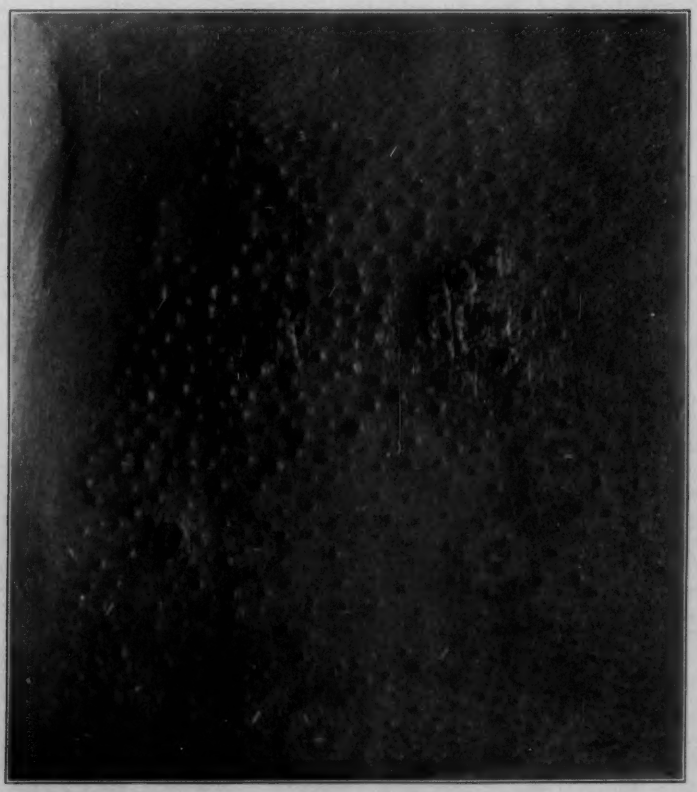
DISCUSSION

DR. J. V. KLAUDER: The "open bite" is, I believe, the least mentioned of the three most significant dental findings that characterize congenital syphilis, the others being hutchinsonian teeth and Moon's, or mulberry, molars. It is interesting to note that Moon, who described mulberry molars, lived at the time of Hutchinson and was a dentist at one of the London hospitals. I do not think that the "open bite" is diagnostic of syphilis, but it is infrequent in patients who do not have congenital syphilis. This patient does not have other stigmas of congenital syphilis that are usually dealt with in textbooks, such as Clutton's joints and peripheral choroiditis. I believe that dermatologists should think in terms of the ectoderm and examine the eyegrounds of patients with cutaneous disorders.

DR. JOHN H. STOKES: I recognized the example of this stigma that Dr. Klauder has so wisely emphasized. I suggested that Dr. Shaffer look into the French literature on the anomalies of development of the center of the face. These affect the upper central incisors and the arch of the palate and cause the "dishing" of the face, as it is sometimes called, and the flattening of the nasal bridge which has no connection with any injury to or destruction of the septum. Several French writers have insisted that the effect of the toxin of Spirochaeta pallida on the embryo is the cause of a good deal of the diagnostic facies and other important stigmas in the person with congenital syphilis.

Psoriasis Associated with Lichen-Spinulosus-like Eruption. Presented by Dr. Donald M. Pillsbury and Dr. Bertram Shaffer.

D. C., a white girl aged 5 years, rather obese but intelligent, presents on the anterior parts of the legs diffuse patches of closely set hyperkeratotic follicular lesions with pronounced spine formation. On the right arm there is a sharply circumscribed group of lesions of similar nature. There are many discrete and confluent psoriasiform lesions in the same sites. "Rough areas" developed on the extremities about fifteen months ago. Three months later "red scaling spots" appeared, following the scratching and picking of the earlier lesions. The results of



Psoriasis associated with lichen-spinulosus-like lesions.

medical examination were negative. A complete blood count was normal. The tuberculin test, with a 1:1,000,000 dilution of old tuberculin, gave a negative reaction.

DISCUSSION

Dr. Bertram Shaffer: I should like to know what the members think of the follicular lesions. Curiously, they preceded the psoriatic lesions. The psoriatic lesions occurred in the patches of lichen-spinulosus-like lesions after the child traumatized them because of pruritus. I wonder if this condition could be a Köbner-like reaction.

Dr. Sigmund S. Greenbaum: Histologic examination of one lesion would settle that.

DR. JOHN H. STOKES: In considering clinical pictures like this one ought also to think of some of the anomalous rare types of Devergie's disease. In them are seen follicular eruptions which are not characteristically on the dorsa of the fingers and the forearms, and early in the course of the process psoriasiform changes ensue. It is well also to keep in mind the follicular "ids," both tuberculids and dermatophytids, and a careful search ought to be made for any evidence of a fungous infection. I remember, to my chagrin, a child who had what I thought was atypical Devergie's disease. She went to Chicago, and Dr. Fred Harris showed the cultures of favus from her finger nails. One has to be extremely careful to eliminate fungous infections in situations of this sort. The scalp should be searched with the utmost care.

A Case for Diagnosis (Squamous Cell Carcinoma in Scar of Lupus Vulgaris After Trauma?). Presented by DR. DONALD M. PILLSBURY.

L. L., an asthenic, pale white man aged 48, presents a 4 to 6 inch (10 to 15 cm.) granulomatous, fungating, ulcerated, indurated, raised lesion with rolled border on the anterolateral aspect of the right elbow. There is recent limitation of motion of the elbow. The right elbow was injured in an automobile accident eleven months ago (a bruise in an old scar of lupus vulgaris). Within two weeks a pea-sized hyperpigmented papular lesion developed. This rapidly increased to its present dimensions. In 1919 Dr. Hartzell diagnosed a lesion on the patient's right elbow as lupus vulgaris. This lesion regressed under roentgen ray therapy, with the formation of a scar. There is no history of the ingestion of drugs. The patient's father and mother died of tuberculosis. The Wassermann reaction of the blood was negative. A roentgenogram of the region of the right elbow (osseous components) at another institution was normal. A roentgenogram of the chest showed no evidence of tuberculosis. Dr. Weidman reported a histologic diagnosis of squamous cell carcinoma. The patient received ultraviolet irradiation for ten days prior to admission to the hospital.

NOTE.—Study of two additional biopsy specimens failed to substantiate the original histologic diagnosis of carcinoma. The lungs were normal on roentgen ray examination with the exception of an old, apparently healed area of tuberculosis in the apex of one. The bones of the elbow showed atrophy from disuse and some shadows which could not be interpreted definitely as an advance of the cutaneous lesion.

Multiple Hemangioma (Presented for Discussion as to Further Treatment). Presented by DR. HAROLD M. JOHNSON (by invitation).

V. F., a white man aged 26, first noticed small erythematous papules on the side of the neck at the age of 5 years. These gradually increased in number and size until five years ago and have always been asymptomatic. The patient, a well developed man, now presents many scattered hemangiomas, ranging in diameter from 3 mm. to 1 cm., on the right side of the chin, neck and preauricular and postauricular regions. There are similar lesions on the left side of the forehead. At this site there is also a linear hemangioma. There is also a verrucous nevus on the bridge of the nose. The general physical and neurologic examinations gave negative results. The Wassermann reaction of the blood was negative. A roentgenogram of the skull is normal. Histologic examination of one of the lesions showed diffuse vascular dilatation in the corium. There was a small projection above the general epidermal surface which was composed of dilated vessels. The patient has been given injections of sodium morrhuate and applications of solid carbon dioxide to the lesions of the nose and neck. Electrodesiccation was tried on small papules on the neck, and Chaoul therapy (moderate) to the lesions of the forehead in doses of 4 to 300 r (1,200 r total) was applied. The result so far has been unsatisfactory.

DISCUSSION

DR. THOMAS BUTTERWORTH, Reading, Pa.: It is generally well recognized that in many cases of vascular nevi involving the trigeminal area the condition is associated with hemangiomas occurring in the brain and mental deficiency; neurologists call the condition nevoid amentia. Some years ago I had a patient (report unpublished) with a large hemangioma involving the lower lip. Roentgen ray studies revealed a calcified hemangioma of the skull. Colloidal thorium dioxide (thorotrast) was injected into the internal carotid artery, producing good visualization of the larger vessels on the surface of the brain and around the optic chiasm, but the nevus was no better visualized than on the flat roentgenogram. One can demonstrate angioma within the brain only when there is calcification. Not all such nevi become calcified.

DR. J. V. KLAUDER: I think that in some of the cases to which Dr. Butterworth has made reference the eyegrounds have shown vascular changes. This further emphasizes the importance of correlating lesions on the skin with changes in the eyeground.

Intraepidermal Epithelioma. Presented by DR. JOHN W. LENTZ (by invitation).

F. L. A., a white man aged 69, presents a superficial pigmented plaque on the abdomen near McBurney's point. There is no telangiectasia, scaling or inflammatory reaction. The lesion has been present for four years and is at the site pinched by a supportive belt. It began as a minute brown macule. There is no history of ingestion of drugs. The Wassermann reaction of the blood was negative. Histologic examination showed superficial basal cell epithelioma.

DISCUSSION

DR. SIGMUND S. GREENBAUM: I am particularly interested in intraepidermal epithelioma because the pathologists do not always call these lesions epitheliomas. Dermatologists, I think, readily recognize the lesion as superficial epithelioma, but the infiltration is so fine and so superficial that it becomes visible only on stretching the skin.

A Case for Diagnosis (Herxheimer Reaction? Gumma? Nonspecific Infected Granuloma?). Presented by DR. HAROLD M. JOHNSON (by invitation) for DR. JOSEPH STOKES.

M. B., a thin, pale 12 year old boy with destruction of the entire upper lip, the nasolabial folds and the skin and cartilages of the nose, was well until Sept. 1, 1937, when his right lacrimal sac became infected. Each side of the nasal cavity now presents excessive granulation tissue, which is covered with purulent exudate. The front teeth are loosely held by the soft gum tissue. There is beginning entropion of the inner canthus of the right eye. The hard palate and the larynx are normal. He was given seventeen high voltage roentgen ray treatments by a radiologist. Shortly afterward the nasal bones began to be eroded, and small pieces fell out during nasal irrigation. A positive serologic reaction of the blood was obtained, and the patient was treated with neoarsphenamine (0.45 Gm.), iodides and mercury. After continuous therapy with twenty-five injections, the tissue response was excellent, but the nasal discharge remained. He was then given a bismuth compound intramuscularly and mercury inunctions, with no improvement in the discharge. Arsenical treatment was resumed, but a severe local flare-up of the inflammation of the cartilaginous structures in and about the nose occurred. The arsenical was increased to semiweekly treatments, but the tremendous destruction continued. In about December 1939 he came to the pediatric department. Treatment with zinc peroxide packs, saline solution and potassium permanganate irrigations was ineffectual. Allantoin and cod liver oil ointment gave decided improvement. Antisyphilitic therapy was resumed with small doses of bismuth

salicylate preparatory to bismarsen (bismuth arsphenamine sulfonate). The patient has made such rapid improvement during the last two months that a skin graft and plastic repair of the nose and lip are being made. The family history and laboratory studies are not significant as far as syphilis and other pertinent data are concerned. Histologic study showed a foreign body type of reaction. A roentgenogram of the chest was normal. A tuberculin test with old tuberculin gave a negative reaction. A complete blood count was within normal limits. The Wassermann reaction of the blood was positive. The cerebrospinal fluid showed medium positive serologic reactions; the other tests gave normal results. Roentgenograms of the face showed destruction of the bones. The result of a guinea pig inoculation of material from the tissue was negative. The treatment consisted of zinc peroxide packs, potassium permanganate and saline solution irrigations, ten injections of bismuth subsalicylate, seven injections of bismarsen and the local application of azochloramid in olive oil.

DISCUSSION

DR. J. V. KLAUDER: If arsenic was given prior to the roentgen ray therapy, it recalls the idea of the undesirability of giving roentgen ray treatments to persons who are receiving arsphenamine, in view of the exaggerated reaction that is alleged to result from the roentgen rays.

DR. JOHN H. STOKES: It seems to me that the boy has pursued so erratic a course, from the standpoint of conventional ideas of treatment, that one has to be careful about saying that what occurred after something else was due to what preceded it. From the start we guessed wrong on what was the appropriate treatment for this lad. His first startling improvement occurred under pediatric management with cod liver oil locally. For subsequent measures we advised fever therapy, but our advice was not taken, and I must say the improvement gained under the milder management was striking and interesting. The possibility that there is an infection we have not recognized, an allergic response to infection or a flare-up of an intercurrent infection deserves as much consideration as the relation of the arsenical treatment to roentgen ray therapy.

DR. HERMAN BEERMAN: Dr. Richmond Holcomb (retired), of the navy, saw this boy after Dr. Stokes did, and he thought the condition was syphilis of the center of the face. He has encountered about 900 cases of this type in Guam. He did not think the appearance had anything to do with the treatment or anything else but the disease itself. He has also encountered several similar cases in Philadelphia.

DR. JOHN H. STOKES: Some of these processes in the center of the face do not have anything to do with syphilis, although one may connect the syphilis with the condition in some remote and devious manner or even directly.

DR. J. V. KLAUDER: I think Dr. Holcomb is of the opinion that gangosa is also due to syphilis.

DR. SIGMUND S. GREENBAUM: I think that the etiologic diagnosis here depends entirely on the result of the serologic test. There is a condition, a granuloma of the lip, described abroad as lupus pernio mutilans, which is characterized by the progressive destruction of the center of the face and of the palate.

A Case for Diagnosis (Nonspecific Chronic Granuloma? Hypertrophic Lichen Planus? Lichenificatio Gigantea?). Presented by DR. JOHN W. LENTZ (by invitation).

U. C., a white man aged 63, of normal appearance for his age, presents: (*1*) a lichenified hyperpigmented plaque on the anterolateral aspect of the left leg, (*2*) a palm-sized, erythematous, elevated hyperpigmented plaque in the left groin, (*3*) rhinophyma and (*4*) chronic interdigital dermatophytosis of both feet. The condition had its onset thirteen months ago on the anterolateral aspect of

the left leg and in the left groin as erythematous plaques with nocturnal pruritus. Scrapings and cultures were negative for fungi. Examination of the urine for sugar, bromides and iodides gave negative results. The dextrose tolerance test gave a normal curve. The Wassermann reaction of the blood was negative. Psychiatric study revealed no abnormalities. On Nov. 22, 1939 histologic examination showed vegetative dermatitis and hypertrophic lichen planus. After treatment, on Jan. 18, 1940 the histologic picture was the same. On February 7 the histologic picture suggested a questionable nonspecific chronic granuloma, but hypertrophic lichen planus could not be eliminated. Treatment with strong keratolytics produced no regression of the lesion and but slight reduction of the pruritus. Roentgen ray therapy (1,300 r, with a 1 mm. aluminum screen) produced slight results on both itching and lesions. The application of solid carbon dioxide produced both regression of the lesion and reduction of the pruritus.

DISCUSSION

DR. SIGMUND S. GREENBAUM: One should not make a diagnosis of hypertrophic lichen planus without making an examination for local amyloid disease. Such an examination is especially desirable in this case, because the lesion on the lower third of the outer surface of the left leg is suggestive indeed.

Streptococcic Infection of the Ears. Presented by DR. NORMAN R. INGRAHAM (by invitation).

A. K. K., a white woman aged 27, has had recurrent episodes of small furuncles and discrete follicular, pustular lesions of the body and extremities for the past seven years. There has been inconstant and recurrent discharge from the left ear for many years. When first seen by us, on April 24, 1930, she had infectious eczematoid dermatitis of the left auricle. Recurrence of the aural condition followed temporary improvement after a variety of procedures, including mastoidectomy, administration of sulfanilamide internally and locally, roentgen ray treatment, application of ammoniated mercury ointment, 3 per cent ichthammol ointment, potassium permanganate compresses, staphylococcus toxoid, sulfur and salicylate acid ointment, phenylmercuric nitrate (1:1,500), hydrous wool fat and aquaphor (an oxycholesterol-petrolatum ointment base) and alcohol compresses, insufflation of Sulzberger's iodine powder, a low carbohydrate and allergen-free diet and shampoos. The process has shown a flare-up at the menstrual period and exacerbations under worry and mental stress. Roentgenograms of the mastoids on March 26, 1940 showed that the cells of both mastoid regions were considerably increased in density and that on both sides there were many remaining areas which could be pneumatic cells or could be small abscesses. Cultures of material from the cutaneous surface of the canal and auricle of the left ear (March 10, 1939) yielded hemolytic Staphylococcus aureus and hemolytic Streptococcus anginosus. On March 22, 1940 cultures of material from the canal of the ear contained hemolytic streptococci, hemolytic staphylococci and diphtheroids. A culture of the material from the throat showed rare hemolytic streptococci, many nonhemolytic streptococci, Streptococcus viridans and Haemophilus influenzae. Controlled intracutaneous tests with hemolytic staphylococci and staphylococcus ambotoxoid gave positive results in twenty-four hours. Repeated blood counts have been normal. The values for blood sugar and the results of dextrose tolerance tests were normal. Complete allergy studies gave no leads. The patient is presented for therapeutic suggestions.

Streptococcic Cellulitis of Elephantiasis Nostras Type (Recurrent). Presented by DR. DONALD M. PILLSBURY and DR. CLARENCE LIVINGOOD (by invitation).

A. C., a white woman aged 41, apparently in good health, presents a dusky erythema of the skin anteriorly and inferiorly and along the sides of the nose,

together with a rather brawny edema of the same sites. The local picture changes considerably from time to time. The condition had a sudden onset with headache, chills and fever accompanied by edema and erythema of the face in January 1939. It subsided, leaving a residual erythema. There was a similar attack in March and in July and to a lesser extent each month since then, each time two to three days before her menstrual period. She has had measles, mumps, scarlet fever, pneumonia, frequent colds and chronic sinusitis, and a "nervous breakdown" occurred five years ago. A complete blood count showed: 75 per cent hemoglobin and 3,810,000 erythrocytes and 5,950 leukocytes per cubic millimeter, with 72 per cent polymorphonuclear leukocytes, 23 per cent lymphocytes, 4 per cent monocytes and 1 per cent eosinophils. Serologic tests for syphilis gave negative reactions.

DISCUSSION

DR. J. V. KLAUDER: I think the administration of sterile milk intramuscularly will help both of these patients. For the first patient I would suggest mercurophen, 1 grain (0.06 Gm.) to a 6 ounce (170 cc.) mixture, as a lotion.

DR. THOMAS BUTTERWORTH, Reading, Pa.: I think patients with a condition like this do better with liquids and lotions than with greases.

DR. LOUIS GOLDSTEIN: For patients with periauricular dermatitis I have used gentian violet. After the vesiculation and excoriation have cleared and the inflammation has subsided, I use roentgen rays. This therapy has given me good results.

DR. MORRIS MARKOWITZ: I think that ointment of coal tar is one of the best applications for these conditions.

DR. JOHN H. STOKES: Alternations of 10 per cent ammoniated mercury ointment with ointment of coal tar yield satisfactory results, but the dermatosis relapses. At least, I have not been able to maintain the good result.

DR. SIGMUND S. GREENBAUM: Some years ago I had occasion to use streptococcus toxin for a patient with erysipelas, and I think subsequently in 2 other patients I was able to produce immunization to the point where repeated attacks were prevented. Only yesterday one of these patients told me that she had not had an attack of erysipelas for eight or nine years. I am wondering whether an attempt should not be made to obtain the streptococcus that may be the cause of this condition and an attempt made at immunization with its filtrate.

DR. J. M. SCHILDKRAUT, Trenton, N. J.: Has any one used antivirus ointments for these conditions? They are ointments made up from the filtrates of streptococci and staphylococci.

Congenital Linear Pigmentation of Negroes. Presented by DR. HAROLD M. JOHNSON (by invitation) and DR. DONALD M. PILLSBURY.

H. G., a Negro aged 49, has noted a linear pigmentation on the lateral side of the arms since childhood. No other similar pigmentation was noted elsewhere on physical examination. Routine examination of 200 Negroes revealed this pigmentary line in 31.5 per cent of them. Ten per cent of the patients showed such lines on both arms. The pigmentation was sharply demarcated, extending from the tip of the acromial process along the border of the arms and fading into the cubital fossa. Histologic examination showed normal epidermis with increased pigmentation. There was slight acanthosis with increased pigmentation at one end of the epidermis, probably designating the line of demarcation.

DISCUSSION

DR. J. M. SCHILDKRAUT, Trenton, N. J.: To me that line looked lighter than the rest of the skin.

DR. HAROLD M. JOHNSON (by invitation): Dr. Pillsbury and I have been interested in this linear pigmentation. In the literature the only thing I could find was a short article (Futcher, P. H.: *Science* **88**:570 [Dec. 16] 1938) in which the

line was not considered congenital. According to Futcher, the histologic examination showed nothing abnormal. We believe that in 10 per cent or more of our cases the condition is probably congenital. I have written to the professors of embryology at Tulane University, at the University of Nebraska and at Johns Hopkins University and talked to professors of embryology at the University of Pennsylvania. No one could give me information on this anthropologic problem.

Diffuse Morpheiform Type of Scleroderma with Calcinosis (Thibierge-Weissenbach Syndrome). Improvement under Prostigmine Bromide Therapy. Presented by DR. C. C. THOMAS:

M. L., a thin, gaunt, white woman aged 24, presents slight stiffening of the skin about the mouth and chin. There are the remains of a former sclerodermatous band extending to the wrist on the inner aspect of the forearm and the dorsum of the right hand. There is also a slight residual brownish pigment in these regions. There is now about 50 degrees of motion in the right wrist joint. Large deposits of calcium can be felt over both anterior iliac spines. A small deposit is palpable on the ulnar aspect of the right elbow joint and on the right knee. There are contracture and hardness of the hamstring muscles. The condition had its onset in the fall of 1934 with itching of the hands. Gradually the fingers became stiff. This continued during the next year, coincident with the patient's first pregnancy. During 1936 the skin of the dorsa of the hands, forearms and chest became brownish. In 1937 the skin became lardaceous and shiny; the fingers were contracted in flexion; the wrists became immobile, and the lower third of the face and the skin of the "V" of the neck became shiny, firm and hard. The mouth could hardly be opened. On the inner surface of the right arm a brownish, thickened band spread from wrist to forearm. In 1939 deposits of calcium were discovered in the heels, near the elbow joints and over the iliac spines. A stiffness of the hamstring muscles developed, and pain of the right wrist joint with absolute rigidity began in December. The patient has had varicella, measles, influenza and pertussis. In November 1937 the basal metabolic rate was +19 per cent; the serum calcium 9.1 mg., the serum phosphorus 4 mg. and the blood cholesterol 102 mg. per hundred cubic centimeters. In January 1940 the calcium amounted to 9.6 mg. and the phosphorus to 4.2 mg. per hundred cubic centimeters of serum. The blood count was normal except for 7 to 10 per cent monocytes and 4 per cent eosinophils. Results of other studies were normal. Roentgenograms of the elbows, feet and pelvis showed deposits of calcium. Between 1937 and January 1940 two hundred and twelve treatments of acetylbetamethylcholine (mecholyl) iontophoresis resulted in considerable improvement. The patient's condition remained stationary, however, during 1939. Since Feb. 20, 1940 the patient has had oral medication with prostigmine bromide, 0.015 Gm., nine tablets daily, with decided improvement, resulting in loss of pain and return of motion to the right wrist, softening and decrease in the size of the morpheiform patches and increase in strength and motility of the hands.

DISCUSSION

DR. C. C. THOMAS: The first reason for presentation of this woman is that the appearance of the calcinosis coincided with improvement of the scleroderma. This is interesting because increased tissue calcium has been reported in scleroderma, and it is probable that it was precipitated out in the form of calcium deposits and coincident with clinical improvement. Secondly, for about a year the patient's condition had been stationary, but in the last two months she has improved markedly under the administration of prostigmine, a bromide which, to my knowledge, has not been tried previously in scleroderma. I think it is a promising form of treatment.

DR. J. M. SCHILDKRAUT, Trenton, N. J.: I showed a man about a year ago with diffuse scleroderma. His skin cleared up with the administration of pancreatic extract.

Chronic Pyogenic Dermatitis of the Hands and Feet with "Bacterid" on the Arms and Trunk. Presented by DR. DONALD M. PILLSBURY and DR. CLARENCE LIVINGOOD (by invitation).

M. F., a white man aged 24, healthy looking, alert and cooperative, has an erythematous crusted plaque on the dorsum of each hand and on the outer surface of the right ankle. The flexor surface of the entire right arm and the upper part of the left arm is the site of an erythematous, oozing and superficially crusted dermatitis, with individual similar lesions on the back and inner surfaces of the thighs and a few receding lesions on the face (a hematogenous distribution). The family history shows no pyogenic tendencies in any of the members; the father of the patient is allergic to sea food. The patient had a series of furuncles at the age of 8 years, at 15 and at 16. He had a mastoidectomy at the age of 12 years. He had cellulitis of the hands at the age of 13. The blood serologic tests for syphilis were negative. The complete blood count was within normal limits except for 8 per cent eosinophils. The urine was normal. The lesion gave a pure culture of hemolytic Staphylococcus aureus. Three and a half years ago the patient had a vesicular eruption on the outer surface of the right ankle, with a similar eruption on the dorsum of both hands about two weeks later. It has persisted to date without complete clearing at any time, although he has had many periods of temporary improvement following roentgen ray treatments, particularly two weeks ago. One week after an intradermal injection of staphylococcus toxoid (1:100) by another physician, he had a sudden attack of vesicular and pustular lesions on the arms, back, inner surfaces of thighs and face, with particular localization at the sites of the injection. Since then there has been coalescence of the lesions, itching and oozing, with slow improvement in the past few days. The patient has had many different types of local treatment since the onset of the generalized eruption, consisting of potassium permanganate baths, mild antiseptic ointments, sedatives, dilute hydrochloric acid, calcium gluconate and histaminase. An injection of autogenous whole blood caused a moderate chill, which responded quickly to an injection of epinephrine.

DISCUSSION

DR. SIGMUND S. GREENBAUM: On what basis was the diagnosis of generalized "staphylococcid" made?

DR. CLARENCE LIVINGOOD (by invitation): Because the eruption on the body occurred after the injection of staphylococcus toxoid. I admit that it is a loose diagnosis.

DR. SIGMUND S. GREENBAUM: I think it is a good diagnosis, but on the hand the man has a vesicular eruption. I have given many injections of staphylococcus filtrate, using staphylococci of extreme virulence for making the filtrate and organisms that produced extremely strong toxins, but I have never seen a generalized eruption of this sort.

Linear Scleroderma with Facial Hemiatrophy. Presented by DR. ROBERT C. LOFGREN (by invitation).

Mrs. A. B. C., a white woman aged 26, in apparent good health, gave a history of injury to the right side of the body. Fifteen years ago white spots developed on the front of the right thigh. They gradually spread down her right leg and up the right side of her body to the thorax. There were no associated symptoms during this time. Erysipelas developed on the right leg about six months after onset of the present trouble. She improved with massage, heat, exercise and ingestion of thyroid. About 1936, shortly after the birth of her only child, she noticed that her right leg was getting smaller than the left. This has progressed to the present. There has been no diminished strength, coldness or numbness of the affected limb. She has complained of occasional stiffness and pain in the right knee during the winter. Occasionally serum discharges from a sinus on the

anterior part of the right thigh. Examination revealed scattered plaques of atrophic skin. One of these, about 3 inches (7.5 cm.) in diameter, is located on the left upper part of the back. There is also a linear lesion on the right side of the back, which begins near the spine and extends around the thorax to the right breast, to the groin and down the thigh over the knee to the inner malleolus of the ankle. There is another lesion over the left iliac region. These plaques are slightly depressed, and blood vessels are clearly visible through the thinned epidermis. The right leg is smaller than the left, averaging about 4 to 6 cm. less in circumference at the ankle, calf, knee and thigh. Her forehead appears slightly asymmetric and depressed on the right side of the midline. There is an area of alopecia of the scalp about 4 cm. in diameter. The neurologic examination showed no abnormality. The Wassermann reaction of the blood was negative. Examination of the blood showed 10.2 mg. of calcium and 3.5 mg. of phosphorus per hundred cubic centimeters. Roentgenograms of the skull, thorax, vertebrae and legs revealed only slight demineralization of the right lower extremity. The basal metabolic rate was + 12 per cent in 1926. The patient was treated with thyroid extract, solution of potassium arsenite U. S. P., pituitary extract, ultraviolet irradiation, exercise and massage on her first admission (1926 to 1929), with definite improvement. Since the last admission she has received bismuth hydroxide and massage.

DISCUSSION

DR. JOHN H. STOKES: I do not think that there is facial hemiatrophy here. There is a depression in the skin to the right of the midline, extending from the forehead into the hair, but there is no asymmetry when one looks at the nares and the contour of the nose from below. What I imagine has occurred is that the woman has had a plaque of morphea in her scalp, and the atrophic residue is now seen in the skin, rather than a true facial hemiatrophy. I asked the patient about the date of the injury and she said she was 10 years of age when she fell off a porch roof. I suspect that the morphea developed after she had reached adult growth. There are none of the usual accompaniments of hemiatrophy in this case. There is no recession of the eyeball; the nares are practically identical in flare and shape, and the upper lip is bilaterally symmetric.

DR. ROBERT C. LOFGREN (by invitation): As far as the patient can remember, the lesion of the scalp occurred simultaneously with the scleroderma, when she was 12 years old.

DR. JOHN H. STOKES: That is an age at which hemiatrophy should have developed; she may have a partial hemiatrophy. The roentgenograms show the skull to be symmetric, so I do not see how that can be called hemiatrophy.

DR. ROBERT C. LOFGREN (by invitation): The roentgenograms showed slight demineralization of the right leg as compared with the left. My own impression is that there is atrophy of the subcutaneous tissue due to scleroderma. The patient says there is apparently no diminution in the strength of the leg; it is as good as the other and her job requires constant standing. She walks evenly.

Two Cases of Ehlers-Danlos Syndrome. Presented by DR. JOHN A. FRITCHEY (by invitation), Harrisburg, Pa., and DR. SIGMUND S. GREENBAUM.

B. C. M., a white man aged 43, presents atrophic scars, containing one pseudotumor in the scar of the left knee, on the shins, forearms and forehead (frontal bosses). The integument in the scar is loose, slightly wrinkled and slightly depigmented and contains no appendages (hair or glands). The skin over the entire body, especially over the bony prominences, is hyperelastic, with no change in the appendages of the skin. The joints of all of his fingers are hyperflexible, but no laxity is noted in the larger joints. No lesions are present on the mucous membrane, but the lips show hyperelasticity as part of the general picture. The sides and back of the scalp and the left ear show greasy scaling areas on an erythematous base.

S. M., a white girl aged 13 (daughter of the preceding patient), presents atrophic, slightly hyperemic scars containing no tumor masses on the shins, fore-

arms and forehead. There is a tendency to keloidal formation, as seen over the right shin. The skin of the entire body is hyperelastic, with no change in the appendages of the skin other than keratosis pilaris involving especially the arms and thighs. No lesions are present on the mucous membrane, but hyperelasticity of the lips is noted. The father noticed that her skin had a tendency toward fragility since infancy and has tried to protect her as much as possible from injury, but in spite of all care some injuries have occurred, especially on the shins, the forearms and the forehead, resulting in scars. Hyperlaxity of the small joints and hyperelasticity of the skin have been present from infancy. The father states that from time to time he has noted small tumor masses in the scarred areas.

DISCUSSION

Dr. John H. Stokes: This is the sort of condition which twenty years ago was spoken of as the localized form of epidermolysis bullosa and also frequently as dystrophia bullosa congenita of Werther and Noble. The original illustration appeared in one of the old numbers of the original Neisser Ikonographia. This dermatosis is not uncommon and is usually accompanied by a certain degree of cutis elastica. It generally turns up when a patient starts to play football, and then it is clearly recognized that his shins are different from the shins of other players. He gets lesions just over the kneecap, and the skin of the arm can be stretched 6 inches (15 cm.) with no strain on the skin.

Dr. John A. Fritchey (by invitation), Harrisburg, Pa.: The father has one of those pseudotumors today. I noticed it in the scar on his left knee. He says his daughter occasionally gets them; they come and go.

Dr. Sigmund S. Greenbaum: The father called my attention to his elastic skin when he consulted me for another condition. At first I thought it was epidermolysis bullosa, but there is no history of bullae. Also, trauma did not produce bullous lesions, but the skin would break, with atrophic areas of healing following. The only other member of the family affected was his daughter; she had practically all the phenomena he had, but not so extensively.

Dr. Thomas Butterworth, Reading, Pa.: Another point to be brought out in this matter of differentiation between epidermolysis bullosa and Danlos' syndrome is that in inheritance the Danlos syndrome is a dominant characteristic, while the dystrophic form of epidermolysis bullosa is recessive. This is evidently a dominant characteristic, which would be in favor of the condition being Danlos' syndrome.

Joseph V. Klauder, M.D., *Chairman*

Herman Beerman, M.D., *Secretary*

May 17, 1940

Localized Alopecia of the Eyebrows and Lashes (Alopecia Areata? Trichotillomania?). Presented by Dr. E. R. Gross, Wilmington, Del.

E. L., a white boy aged 14, well developed and apparently in good health, shows scanty lashes on both lower lids and none on the upper lids. The eyebrows present a stubby growth of sparse hair. The process began in September 1939, and three days after onset there was total alopecia of the lashes and eyebrows. The patient has always been nervous.

DISCUSSION

Dr. Reuben Friedman: I suggest trichotillomania. The clinical appearance is not that of alopecia areata. The patient's father told me that the boy is nervous

and creates scenes at home. In addition, there is a history of domestic discord. The father was recently discharged from a hospital, where he was confined for two weeks for a "nervous breakdown." The mother has left the family on four different occasions to go off with another man. The boy, who is an only child, is in constant conflict with the mother on one side and the father on the other. The father also told me that he has repeatedly noticed his son plucking hairs from his eyebrows and eyelashes.

DR. FRED D. WEIDMAN: I had the same impression when I first looked at the patient, but I did not go into the history in detail. In this condition the hairs need not necessarily be plucked out. They may be largely rubbed out. Incidentally, there have been epidemics of this artificial alopecia of the eyebrows in penal and other institutions. One person gets the habit of rubbing out his eyebrows, and it is taken up by the other inmates. Such endemic alopecia was at first considered evidence in favor of the infectious origin of alopecia areata until the true cause was disclosed.

DR. JOSEPH V. KLAUDER: So-called epidemics of trichotillomania of which Dr. Weidman speaks are probably the result of suggestion and mimicry, which also play important roles in the use of cosmetics and tattooing and in human adornment. I have discussed this elsewhere in more detail (Psychogenic Aspects of Skin Diseases, *J. Nerv. & Ment. Dis.* **84**:249-273, 1936).

A Case for Diagnosis (Leprosy? Rheumatic Nodules? Circumscribed Myxedema?). Presented by DR. EVAN B. HUME (by invitation) for DR. EDWARD F. CORSON.

Y. D., a slightly built Chinese man aged 40, with a pitted face and protruding eyes and carrying his head slightly tilted back, presents on the extensor surfaces of the lower half of the legs several nodules which are discrete, spherical and hard and are not attached to underlying structures. They vary in size from 0.5 to 1.5 cm. in diameter. There is no redness, tenderness or pain, and sensation is not so acute over the nodules as on the surrounding skin. The lateral third of each eyebrow lacks hair. There is patchy loss of hair of the scalp. The forehead appears to have thickened skin, but no nodules are noted. The skin over the right first carpometacarpal joint is red, swollen and hot, owing to inflammation of the joint. The ulnar nerves at the elbows are doubtfully thickened. Medical examination revealed paralysis of both superior rectus, both external rectus and both inferior oblique muscles. Exophthalmometer readings were: right eye, 15; left eye, 17-18. Visual acuity was 20/30 and 20/30, and the visual fields were normal. The nasal septum was thickened, and he had a chronic right frontal and bilateral maxillary sinusitis. The patient was born in China and came to the United States twenty years ago. He suffered a severe attack of smallpox at the age of 8 or 9 years but stated that he had had no other diseases. Roentgenograms of the chest show increase in the root shadows and peribronchial markings but no evidence of tuberculosis. On Feb. 2, 1940 he came to the neurologic department, where he was found to have blurring of the left optic disk, diplopia and impaired vibratory sense in the feet to just above the ankles. On February 14 a roentgenogram of the skull showed no evidence of increased pressure, but the anterior and posterior clinoid processes of the sella turcica were suggestive of localized pathologic change, probably a suprasellar space-taking lesion, and there were some indistinct areas of density just above the dorsum. The Wassermann and Kahn reactions of the blood were negative on several occasions. Wassermann reactions of the spinal fluid were negative, and gold curves were normal. The blood count and the urine were normal. Two scrapings from the nasal mucosa, made two weeks apart (the second after the administration of potassium iodide orally), contained no lepra bacilli. The basal metabolic rate was repeatedly normal. A biopsy specimen obtained in a New York hospital on Oct. 23, 1939 showed: "Circumscribed edema, myxomatous in type, in the deeper fibrous portion of the skin, without proliferation and appearing to be a degenerative process. Practically no infiltration."

DISCUSSION

DR. DONALD M. PILLSBURY: If I understand correctly, there has been no absolute evidence of leprosy in this case. The patient has definite bilateral exophthalmos and is thin, but he has no other evidence of hypothyroidism. Because of the exophthalmos and because these nodules are principally over the pretibial region, I should like to suggest a diagnosis of circumscribed myxedema. The lesions are apparently not characteristic of the ordinary plaque type of localized myxedema in which one has, as a rule, one or two fairly large plaques with a pigskin appearance of the overlying skin. In this case there are about four or five nodules, and the skin over them appears normal. It would be possible for this patient to have circumscribed myxedema without frank hypothyroidism now, since the lesions may persist after the toxic reaction has subsided.

DR. FRED D. WEIDMAN: I do not think this condition is leprosy. These nodules are wooden. I surmise that they are of the order of dermatofibroma lenticulare or, if not quite that, that they conform somewhat with multiple subcutaneous xanthoma, which Broders has described (Broders, A. C.: Benign Xanthic Extraperiosteal Tumor of the Extremities Containing Foreign Body Giant Cells, in Collected Papers of the Mayo Clinic, Philadelphia, W. B. Saunders Company, 1919, vol. 11, p. 1302). I should like to see histologic sections. I believe that the lesions are not those of a fundamental disturbance of lipoid metabolism—that is, not one of the cutaneous lipoidoses—but are fibromatous changes which usually come about through traumatism. In some fibromas xanthoma develops in the cells as a secondary change. I think for practical purposes that the lesions in this case are subcutaneous fibromas. I noted in the history that there was a lesions above the pituitary. This finding would throw more light on the xanthoma question. The pituitary is a location where xanthomas can develop, as in Christian-Schüller disease, for example.

Multiple Pigmented Nevi (Malignant?). Presented by DR. DOUGLASS A. DECKER, Allentown, Pa.

Mrs. C. A., a white woman aged 25, presents two hundred and thirty-seven pigmented lesions scattered over the entire body. On the left shoulder there is a 2 cm.-sized, deeply pigmented, nonhairy plaque that has developed in the past nine months. On the right cheek there is a bean-sized, jet black, nonhairy nodule that has developed also in the past nine months. The patient has had many "moles" all her life. A nevus was removed from her left arm three years ago and another from the left breast a year ago. In the past nine months the number of lesions has doubled, and the lesions on the left arm and on the right cheek have grown to their present size. One pathologist stated that the histologic sections showed evidence of malignancy, while the second states that there are no such signs. The patient has received no treatment.

DISCUSSION

DR. FRED D. WEIDMAN: I do not think that these lesions are malignant now. I think the lesion on which biopsy was performed could be regarded as a "malignant freckle." There is so much sooty black mixed in with the brown that I should say it bodes ill at some future time. Dr. Decker was particularly concerned with the rapid development of additional lesions. In the past three months something like a hundred new lesions have developed. In spite of that fact, I do not think they are metastatic lesions. I think they represent a delayed development. In benign nevi, particularly those at the dermoepidermal junction, cells with remarkably large and deceptive nuclei are observed. One cannot regard these large cells as malignant unless there are other associated features of malignancy.

DR. ROBERT L. GILMAN: I think these cases are extremely important from the patient's and from the physician's standpoint, since physicians frequently have to decide clinically whether a condition is malignant or not. It is becoming a

problem to reassure the patient that what he has is merely an outcropping of delayed-appearing nevi rather than a metastatic condition.

DR. DONALD M. PILLSBURY: Has there been anything in this woman's general medical background to explain to some extent the rapid increase in the number of lesions?

DR. JOSEPH V. KLAUDER: I do not believe that the lesions are malignant. I agree with Dr. Weidman, although the patient presents two of the signs of malignancy.

DR. ROBERT L. GILMAN: One of my patients with similar lesions noticed an increase in superfluous hair. Although there has been no study of the adrenal glands, I was informed that for five weeks prior to the appearance of these lesions this patient had been taking large doses of thyroid.

A Case for Diagnosis (Granuloma Annulare? Annular Erythema Multiforme Perstans? Erythema Elevatum Diutinum? Intraepidermal Epitheliomatosis? Porokeratosis of Mibelli?). Presented by DR. H. A. SAMITZ (by invitation).

L. O., a white woman aged 46, presents lesions restricted to the dorsal aspects of the hands, with two larger lesions on the right hand and four smaller ones on the left. The lesions are all of the same character but vary in size from 0.5 to 5 cm. in diameter. They are distinctly annular, with pinkish raised borders consisting of coalesced papules. The centers of some lesions appear slightly atrophic. There is no induration or scaling. In the past months discrete papules have appeared on the forearm. The eruption on the hands is of four years' duration. There are no subjective symptoms referable to the dermatosis. The patient has hypertensive cardiovascular disease and is passing through the menopause. The urine and a complete blood count were normal. The basal metabolic rate was + 8 per cent. The serologic reactions of the blood were negative. On Jan. 13, 1940 Dr. Weidman made a histologic diagnosis of foreign body granuloma (on the basis of degenerate collagenous and elastic tissue and foreign body giant cells). On February 10 another section suggested acrochordon (hyperplasia of the epidermis and degeneration of fibrous tissue). The patient was given four roentgen ray treatments, with negligible results.

DISCUSSION

DR. FRED D. WEIDMAN: The extreme atrophy of the center of that lesion is something that is not seen in regressing granuloma annulare. If this lesion were to regress, there could be no restoration of the central parts to normal. There is no question that the lesion is a granuloma, in view of the infiltrated margins. I have encountered several cases like this in which the diagnosis of porokeratosis of Mibelli has been suggested. Dr. Wright has often criticized this diagnosis. There are two types of porokeratosis of Mibelli: one, the classic type with the furrowed margin, and the other this type. Histologically, the infiltrated margins in the present case show the picture of a foreign body granulomatous reaction (Schnabl, E.: A Case of Porokeratosis Mibelli, *Arch. f. Dermat. u. Syph.* **157**: 207, 1929). It seems that four years is a long time for granuloma annulare to persist.

DR. HERBERT J. SMITH: Several months ago the lesion looked like a typical granuloma annulare. Tonight the picture has changed, since at that time the edges were distinctly raised and there was not the decided atrophy of the center that is present now.

DR. MORRIS MARKOWITZ: Two years ago I presented a case of this condition on the dorsum of the hand in which Dr. Weidman made a diagnosis with the same results as now. Dr. Greenbaum at that time said that the condition was intraepidermal epithelioma.

DR. CARROLL S. WRIGHT: I examined this patient carefully with porokeratosis of Mibelli in mind. One should not always try to make that diagnosis only on lesions with the exact textbook description. This patient's eruption does not fit in with true porokeratosis of the type I described in 1921 (ARCH. DERMAT. & SYPH. **4**:469 [Oct.] 1921). In my case all the lesions had a little furrow running around the top of the ridge. There is a central atrophy in porokeratosis, and when one makes a cross section in this ridge there is a little overlapping, like an awning, coming over on one side. In the microscopic sections one sees many dilated follicles with large plugs in them. Matsumoto (*J. Cutan. Dis.* **34**:489, 1916) in Japan described an unusual case of porokeratosis and declared that all examples of this disease do not look alike. Perhaps when I argued with Dr. Weidman in the past, I tried to fit all the eruptions to the description of the lesions I studied.

Symmetric Callosities of the Toes and Soles. Presented by DR. JOSEPH V. KLAUDER.

R. K., a white girl aged 17, presents a condition which first appeared when she was 2 years old. There are pronounced callosities involving the heels and their lateral aspects and the lateral and flexor surfaces of the toes, with a few discoid callosities on the sole. The surfaces of the callosities are smooth, elevated, thickened and nonulcerative. The uninvolved skin of the sole is normal except for hyperhidrosis, which also affects the palms. The palms otherwise are normal. There is no other cutaneous involvement. There is no family history of similar involvement.

DISCUSSION

DR. JOSEPH V. KLAUDER: This patient may represent the early stage of that condition for which Kienböck suggested the term "trophopathia pedis myelodysplastica" (Kienböck, R.: Ueber Fusserkrankung bei versteckter Rückenmarksmissbildung [Trophopathia pedis myelodysplastica], *Fortschr. a. d. Geb. d. Röntgenstrahlen* **42**:567-582, 1930. Foor, C. G.: Allen, E. V., and Morton, S. A.: Bilateral Trophic Ulcers and Deformity of the Feet: Report of a Case, *Proc. Staff Meet., Mayo Clin.* **6**:361-364, 1931). This condition is characterized by large callosities on the soles and toes, which later ulcerate. There is a deformity of the feet, with destruction of the metatarsal and phalangeal bones associated with some evidence of congenital anomaly or disease of the vertebrae or spinal cord. This patient does not present a congenital anomaly or disease of the vertebrae or spinal cord. I have not as yet had a roentgenogram of her feet.

DR. REUBEN FRIEDMAN: Pressure and trauma may have something to do with the production of the callus in this case. The palmar aspect of the distal phalanges of the right thumb and forefinger and the subungual part of the last digit of the left thumb have begun to show the same yellowish discoloration. The patient is right handed, and it is possible that the pressure of pencil and pen in the right hand may have contributed to the formation of this callus.

DR. JOSEPH V. KLAUDER: It would be hard to explain the lesions on the sides of the toes on the basis of trauma.

DR. FRED D. WEIDMAN: Keratin is one of the substances most strongly stained by carotene. In carotenemia the yellow color is pronounced on the palms and soles. It might be interesting to inquire into the diet of the patient.

Sarcoid Type of Tuberculosis in the American Negro, with Splenomegaly. Presented by DR. CARMEN C. THOMAS.

M. M., a thin Negress aged 27, presents small miliary papules aggregated about the eyelids, and the corners of the mouth and the nose. Larger papules are present on the thorax, and another group is on the abdomen. There is generalized lymphadenopathy. The border of the liver can be felt 3 fingerbreadths below the costal border, and the spleen is tremendously enlarged, reaching almost

to the iliac crest. There are no deformities of the fingers or toes. The lesions on the face began in September 1939. In December she had acute intermittent pain in the left upper quadrant of the abdomen, which has been present off and on since then. She has had pneumonia, and she had pleurisy in 1939. A roentgenogram of the lungs made at a local tuberculosis institute on May 24 showed greatly enlarged hilar lymph nodes and scattered soft spots through the middle third of the right lung. The sputum has been repeatedly negative for tubercle bacilli. Reactions to tuberculin tests on May 24 with purified protein derivative (0.00002 mg. in 0.1 cc.) were 1 plus. A blood count showed 5,600 leukocytes per cubic millimeter, with an increase of monocytes. The patient has been given only symptomatic treatment.

DISCUSSION

DR. FRED D. WEIDMAN: There is a beautiful example of the clustering of lesions at the inner canthus of the eye, which I think is a valuable point in the differential diagnosis of this condition.

DR. CARMEN C. THOMAS: I have had a total of 9 cases of sarcoid disease in the Negro, and in those I was able to feel the spleen in 4 at one time or another. This woman has the largest spleen I have ever encountered in any disease.

A Case for Diagnosis (Poikiloderma? Lupus Erythematosus?). Presented by DR. J. M. SCHILDKRAUT, Trenton, N. J.

H. A. A., a white man aged 52, presents a patchy erythematous eruption of the right side of the jaw and neck, covering an area about 7 by 4 cm. The area involved is deep red, and the skin is somewhat atrophic and telangiectatic. Follicular openings are not patent. The patient claims that the condition came on overnight about three months ago. At times there is slight itching. The condition has not changed since its inception.

DISCUSSION

DR. FRED D. WEIDMAN: It is rather difficult for me to come to a conclusion on such short study. I think it is agreed that there are streaks of atrophy and that between the streaks there are sometimes short ridges and at other places simple papular elevations, and I thought that some of those papules were capped with yellow. Whether that is pus or elastosis I do not know. The location and character of the papules are suggestive, at least, of ulerythema sycosiforme, and if it turns out that the caps are pustular and not simply elastic tissue, it would strengthen this diagnosis.

DR. J. M. SCHILDKRAUT, Trenton, N. J.: When I saw this man, my first thought was that the eruption was lupus erythematosus. The distribution and the history that it developed overnight are rather unusual. These patches are atrophic, and there does not seem to be any adherent scale with patent follicles. There is some prominence of the follicles in places, but I think that is due to the location of the lesions in the bearded area. I think the possibility of poikiloderma should also be considered in this case.

DR. JOSEPH V. KLAUDER: I do not think there is sufficient atrophy to merit the diagnosis of poikiloderma or ulerythema sycosiforme. I favor a diagnosis of lupus erythematosus.

Reticuloendotheliosis. Presented by DR. H. E. TWINING.

J. K., a white man aged 20, was presented for diagnosis on April 22, 1938 (ARCH. DERMAT. & SYPH. **38**:994 [Dec.] 1938), but histologically a diagnosis of reticuloendothelial tumor was made. Roentgenograms from time to time have demonstrated extensive lysis of the bone, involving the femurs, temporal bones and mandibles, with almost complete solution of the coronoid processes; the condyles and rami are also involved. The patient has been given roentgen ray therapy (75 r unfiltered, at weekly intervals), with marked improvement.

DISCUSSION

DR. H. E. TWINING: This case at present is really not a dermatologic one. Two years ago, when I presented the patient, he had lesions in the groins, around the rectum and in the canals of both ears. These lesions entirely disappeared with small doses of roentgen rays. One could almost put one's finger in the lesions in both temporal bones and in the right femur. I had to put the patient to bed for fear of fracture. With roentgen ray treatment these lesions have completely healed, but from time to time new bones become involved. Within the last two months the mandible on both sides was almost in a state of complete fracture, but with careful watching and roentgen ray treatment the boy is in good shape today. He has gained nearly 40 pounds (18 Kg.) in weight since I presented him before.

Book Reviews

Modern Dermatology and Syphilology. By S. William Becker, M.D., and Maximillian E. Obermayer, M.D. Price, $12.00. Pp. 847, with 461 illustrations in text and 32 full color plates. Philadelphia: J. B. Lippincott Company, 1940.

Although there are numerous textbooks in English on dermatology, there is room for the new one by Becker and Obermayer because of its excellence. It is unusually well written in clear and simple language and is remarkably well illustrated. Although the book is primarily intended for general practitioners and students, it contains much valuable information for dermatologists. It lives up to its title in being modern and up-to-date. Space has been allotted to subjects according to their importance, some of the rarer dermatoses and tropical diseases of the skin having been omitted.

The authors have tried to avoid the cyclopedic type of textbook and have laid emphasis on their own ideas. Their classification of diseases of the skin differs somewhat from those commonly used. To make the volume more informal they have included a section at the beginning of each chapter which they term "orientation." As they state, this is given in the intimate language of a demonstrator to small groups of students.

An early chapter is devoted to general therapy, in which preparations recommended are arranged alphabetically. The authors have been rather generous in their mention of proprietary remedies, including cosmetic preparations, giving the names of the firms who manufacture them.

In the chapter on eruptions due to drugs, the types of eruptions produced are first tabulated, and this tabulation is followed by the list of drugs which cause various eruptions. A special chapter is devoted to allergy as it affects diseases of the skin. This difficult subject is satisfactorily discussed. An interesting chapter is devoted to occupational and industrial dermatoses. This contains a tabulated percentage of various substances with which patch tests are made (recommended by Dr. Louis Schwartz).

A comprehensive discussion of the entire subject of syphilis is given in 186 pages. An elaborate chart for the treatment and control of complications is included as an insert.

The authors have followed the nomenclature of the "Standard Classified Nomenclature of Disease," with, as they say, certain revisions and additions. Why the term pompholyx is not used in place of dyshidrosis the reviewer cannot understand, especially in view of the authors' statement that the term dyshidrosis is an "obvious misnomer for a chronic recurring vesicular eruption of the hands and feet." The scholarly qualities of the authors are shown by the absence of mistakes in Latin terminology, which creep into so many American texts.

One of the most valuable features of the book is the numerous illustrations, which not only represent excellent photography but have been splendidly reproduced on glazed paper. The excellence of the black and white illustrations disproves the authors' statement that "colored illustrations are indispensable for accurate presentation of cutaneous disorders." In the reviewer's opinion, few of these illustrations would be increased in value by being colored. On the other hand, little if anything is gained by the color in the plates which depict stasic ulcer, rosacea, dermatitis factitia, pemphigus vulgaris and exudative neurodermatitis.

The bibliography at the end of each chapter is short and is intended to present most of the important publications during the past five years and the more valuable ones of previous years. The work of the publisher is all that could be desired, even though use of glazed paper throughout the book has naturally increased its weight. The book is a splendid contribution to American dermatology.

Directory of Dermatologic Societies *

INTERNATIONAL

Tenth International Congress of Dermatology and Syphilology

Oliver S. Ormsby, President, 25 E. Washington St., Chicago.
Paul A. O'Leary, Secretary-General, 102–2d Ave. S. W., Rochester, Minn.
Place: New York. Time: Postponed indefinitely.

Pan American Medical Association, Section of Dermatology and Syphilology

Elmore B. Tauber, President, 19 W. 7th St., Cincinnati.
Austin W. Cheever, Secretary, 464 Beacon St., Boston.
Place: Buenos Aires, Argentina. Time: August 1941.

FOREIGN

British Association of Dermatology and Syphilology (Canadian Branch)

L. P. Ereaux, President, 1390 Sherbrooke St. W., Montreal.
F. E. Cormia, Secretary-Treasurer, 2068 Sherbrooke St. W., Montreal.

Royal Society of Medicine, Section of Dermatology

H. W. Barber, President, 7 Devonshire Pl., London, W. 1, England.
Louis Forman, Secretary, 7 Devonshire Pl., London, W. 1, England.

NATIONAL

American Medical Association, Scientific Assembly, Section on Dermatology and Syphilology

J. Gardner Hopkins, Chairman, 102 E. 78th St., New York.
C. F. Lehmann, Secretary, 705 E. Houston St., San Antonio, Texas.
Place: Cleveland. Time: June 2-6, 1941.

American Academy of Dermatology and Syphilology

Harry R. Foerster, President, 208 E. Wisconsin Ave., Milwaukee.
Earl D. Osborne, Secretary, 471 Delaware Ave., Buffalo, N. Y.
Place: Palmer House, Chicago. Time: Dec. 8-11, 1940.

American Board of Dermatology and Syphilology

Howard Fox, President, 140 E. 54th St., New York.
C. Guy Lane, Secretary-Treasurer, 416 Marlborough St., Boston.

American Dermatological Association

William H. Guy, President, 500 Penn Ave., Pittsburgh.
Harry R. Foerster, Secretary, 208 E. Wisconsin Ave., Milwaukee.

Society for Investigative Dermatology

Bedford Shelmire, President, 1719 Pacific Ave., Dallas, Texas.
S. W. Becker, Secretary, University of Chicago, Department of Medicine, Chicago.
Place: Cleveland.

* Secretaries of dermatologic societies are requested to furnish the information necessary for the editor to make this list complete and to keep it up to date.

SECTIONAL

Central States Dermatological Association

Elmore B. Tauber, President, 19 W. 7th St., Cincinnati.
Lawrence C. Goldberg, Secretary-Treasurer, 623 Doctors Bldg., Cincinnati.

Mississippi Valley Dermatological Society

Elmore B. Tauber, President, 19 W. 7th St., Cincinnati.
Lawrence C. Goldberg, Secretary-Treasurer, 623 Doctors Bldg., Cincinnati.
Place: Chicago.

New England Dermatological Society

J. Harper Blaisdell, President, 83 Marlborough St., Boston.
Bernard Appel, Secretary, 483 Beacon St., Boston.

Northern New Jersey Dermatological Society

N. B. Heller, President, 31 Lincoln Pk., Newark.
C. C. Carpenter, Secretary, 38 Waldron Ave., Summit.
Place: Academy of Medicine of Northern New Jersey, Newark. Time: Third Tuesday of March, April, October and December.

Southeastern Dermatological Association

Howard King, Chairman, 328 Doctors Bldg., Nashville, Tenn.
J. Lamar Callaway, Secretary, Duke Hospital, Durham, N. C.

Southern Medical Association, Section on Dermatology and Syphilology

Howard Hailey, Chairman, 107 Doctors Bldg., Atlanta, Ga.
John H. Lamb, Secretary, 117 N. Broadway, Oklahoma City.

STATE

California Medical Association, Scientific Assembly, Dermatology and Syphilology Section

H. J. Templeton, Chairman, 3115 Webster St., Oakland.
Frances Torrey, Secretary, 123 Pemberton Pl., San Francisco.

Connecticut State Medical Society, Section on Dermatology

Ralph E. McDonnell, Chairman, 158 Whitney Ave., New Haven.
Louis O'Brasky, Secretary, 1172 Chapel St., New Haven.

Florida Society of Dermatology and Syphilology

Alan D. Brown, Chairman, 117 W. Duval St., Jacksonville.
Lauren M. Sompayrac, Secretary, 117 W. Duval St., Jacksonville.

Louisiana Dermatological Society

M. T. Van Studdiford, President, 912 Pere Marquette Bldg., New Orleans.
R. A. Oriol, Secretary-Treasurer, 921 Canal St., New Orleans.

Massachusetts Medical Society, Section on Dermatology and Syphilology

William Boardman, President, 388 Marlborough St., Boston.
J. H. Swartz, Secretary, 371 Commonwealth Ave., Boston.

Medical Society of the State of New York, Section on Dermatology and Syphilology

H. Bauckus, Chairman, 89 Bryant St., Buffalo.
Eugene Traub, Secretary, 140 E. 54th St., New York.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, SECTION ON DERMATOLOGY

Vaughn C. Garner, Chairman, Germantown Professional Bldg., Philadelphia.
Bernhard A. Goldmann, Secretary, 500 Penn Ave., Pittsburgh.

MICHIGAN STATE MEDICAL SOCIETY, SECTION ON DERMATOLOGY AND SYPHILOLOGY

Frank Menaugh, Chairman, Ford Hospital, Detroit.
Eugene A. Hand, Secretary, 801 Second National Bank Bldg., Saginaw.

MINNESOTA DERMATOLOGICAL SOCIETY

Carl W. Laymon, President, 345 Medical Arts Bldg., Minneapolis.
F. W. Lynch, Secretary-Treasurer, 317 Lowry Medical Arts Bldg., St. Paul.
Time: First Friday in October, December, February and April.

OKLAHOMA STATE DERMATOLOGICAL SOCIETY

John H. Lamb Jr., President, 117 N. Broadway, Oklahoma City.
Onis G. Hazel, Secretary, 1200 N. Walker, Oklahoma City.

TEXAS DERMATOLOGICAL SOCIETY

W. A. Smith, President, 496 Orleans St., Beaumont.
Duncan O. Poth, Secretary-Treasurer, 414 Navarro St., San Antonio.

LOCAL

BALTIMORE-WASHINGTON DERMATOLOGICAL SOCIETY

Walter Teichmann, President, 1726 I St. N. W., Washington, D. C.
Russell J. Fields, Secretary, 1726 I St. N. W., Washington, D. C.
Place: Alternate cities. Time: Third Thursday of each month.

BRONX DERMATOLOGICAL SOCIETY

Leo Spiegel, President, 241 W. 100th St., New York.
Henry Silver, Secretary, 290 West End Ave., New York.
Time: Fourth Thursday of each month from October to May, inclusive.

BROOKLYN DERMATOLOGICAL SOCIETY

S. H. Silvers, President, 920 Bushwick Ave., Brooklyn.
M. Estrin, Secretary, 61 Eastern Parkway, Brooklyn.
Time: Third Monday of each month except June, July, August and September.

BUFFALO-ROCHESTER DERMATOLOGICAL SOCIETY

Edwin D. Putnam, President, 201 N. Union St., Olean, N. Y.
James W. Jordon, Secretary, 471 Delaware Ave., Buffalo.

CENTRAL NEW YORK DERMATOLOGICAL SOCIETY

Leon H. Griggs, President, 1804 State Tower Bldg., Syracuse.
Maxwell C. Snider, Secretary, 106 Oak St., Binghamton.

CHICAGO DERMATOLOGICAL SOCIETY

Herbert Rattner, President, 25 E. Washington St., Chicago.
Michael H. Ebert, Secretary-Treasurer, 25 E. Washington St., Chicago.

CINCINNATI SOCIETY OF DERMATOLOGY AND SYPHILOLOGY

Elmore B. Tauber, President, 19 W. 7th St., Cincinnati.
Lawrence C. Goldberg, Secretary-Treasurer, 623 Doctors Bldg., Cincinnati.
Place: Cincinnati. Time: First Wednesday of each month, except July, August and September.

Cleveland Dermatological Society

Harold N. Cole, President, 1422 Euclid Ave., Cleveland.
Charles G. La Rocco, Secretary, 669 Rose Bldg., Cleveland.

Detroit Dermatological Society

T. H. Miller, President, 1553 Woodward Ave., Detroit.
Ruth Herrick, Secretary-Treasurer, 26 Sheldon Ave. S. E., Grand Rapids, Mich.

Kansas City (Mo.) Dermatological Society

C. C. Dennie, President, 1103 Grand Ave., Kansas City.
Thomas B. Hall, Secretary, 902 Professional Bldg., Kansas City.

Los Angeles Dermatological Society

Harry C. Lindsay, President, 595 E. Colorado St., Pasadena, Calif.
Saul S. Robinson, Secretary, 1930 Wilshire Blvd., Los Angeles.
Time: Second Tuesday of each month, October to May, inclusive.

Manhattan Dermatologic Society

J. Frank Fraser, Chairman, 115 E. 61st St., New York.
Anthony C. Cipollaro, Secretary, 40 E. 61st St., New York.

Montreal Dermatological Society

L. P. Ereaux, President, 1390 Sherbrooke St. W., Montreal, Canada.
Paul Poirier, Secretary, 456 Sherbrooke St. E., Montreal, Canada.

New York Academy of Medicine, Section of Dermatology and Syphilis

E. William Abramowitz, Chairman, 853–7th Ave., New York.
Lewis B. Robinson, Secretary, 102 E. 78th St., New York.

New York Dermatological Society

Edward R. Maloney, President, 80 W. 40th St., New York.
J. Gardner Hopkins, Secretary-Treasurer, 630 W. 168th St., New York.

Omaha Dermatological Society

Donald J. Wilson, President, 1113 Medical Arts Bldg., Omaha.
Leonard J. Owen, Secretary-Treasurer, 954 Stuart Bldg., Lincoln, Neb.

Philadelphia Dermatological Society

Herman Beerman, Chairman, 255 S. 17th St., Philadelphia.
Donald M. Pillsbury, Secretary, 133 S. 36th St., Philadelphia.
Time: Third Friday of each month from September to May, inclusive.

Pittsburgh Dermatological Society

Charles L. Schmitt, President, Medical Arts Bldg., Pittsburgh.
M. W. Rubinstein, Secretary, Medical Bldg., Pittsburgh.
Time: Third Thursday of every month except July and August.

St. Louis Dermatological Society

Martin F. Engman Jr., President, 3720 Washington Blvd., St. Louis.
Joseph Grindon Jr., Secretary-Treasurer, 4500 Olive St., St. Louis.
Place: Barnard Free Skin and Cancer Hospital. Time: 2 p. m., second Wednesday of each month.

San Francisco Dermatological Society

Frances A. Torrey, President, 123 Pemberton Pl., San Francisco.
H. V. Allington, Secretary, 3115 Webster St., Oakland, Calif.
Time: Third Friday of February, April, September and November.